



Spectroscopy of Edge-on Spirals

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ABSTRACT

We present HI line observations of 744 edge-on spiral galaxies, extracted from the *Flat Galaxy Catalog* of Karachentsev *et al.* (1993). Fluxes, systemic velocities and line widths are given for 587 detected galaxies, as well as search parameters for 157 undetected systems. Widths are corrected for instrumental broadening, smoothing, signal-to-noise and profile shape, and an estimate of the error on the width is given. When corrected for turbulent broadening and inclination angle of the disks, the velocity widths presented here can provide the appropriate line width parameter needed to derive distances via the Tully-Fisher relation.

1. Introduction

The neutral hydrogen 21 cm line is a useful tool both for the quantification of atomic gas content and for the measurement of distances, either directly from the redshift via Hubble's law, or indirectly by applying the Tully-Fisher (1977; TF) relation. The study of deviations from Hubble flow has received substantial impetus from the accumulation of large redshift-independent distance data bases, especially for spiral galaxies, and a detailed picture of the distribution of mass, luminous and dark, in the local Universe is starting to emerge (Dekel 1994; Strauss and Willick 1995; da Costa *et al.* 1996; Giovanelli 1997a). Measurements of distance by means of the TF method (or of analogous relations for spheroidal galaxies) are however notoriously noisy, yielding estimates of peculiar velocity with accuracy of about 15% of the galaxy recessional velocity. As a result, maps of the peculiar velocity field at redshifts cz exceeding a few thousand km s^{-1} require large scale volume averaging, and thus sampling

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densities which rapidly approach observationally prohibitive levels. It is then desirable to explore avenues that may lead to obtaining more accurate distance estimation techniques. In 1989, Karachentsev suggested the use of a variant on the standard TF relation. Using a small data base of edge-on spiral systems with accurate photometric and spectroscopic measurements, he showed that a tight correlation may exist between the disk scale length, the central disk surface brightness and the rotational velocity, a variant on the standard TF relation between the absolute magnitude and the rotational velocity.

It is well-known how inclination-dependent corrections affect the error budget of the TF relation: while for edge-on systems the corrections necessary to recover the rotational velocity from the observed velocity width are smallest, and thus the associated errors introduced by such corrections are minimized, internal extinction corrections are largest, and the associated uncertainty is in turn maximized. The opposite occurs for more nearly face-on systems. Since even in the near infrared, such as the I band, extinction corrections are still quite important (Giovanelli *et al.* 1994, 1995), variants of the TF relation that are less sensitive to magnitude corrections become attractive. The one proposed by Karachentsev (1989), and reiterated by Chiba and Yoshii (1996), motivated the preparation of a catalog of edge-on spiral systems (Karachentsev *et al.* 1993). These objects, by virtue of their selection by thresholding extreme values of the axial ratio, are most likely to be nearly bulge-free disk galaxies. In that case, it is presumed that the measurement of disk scaling properties would be facilitated, and that they would be ideally suited for the applications of the mentioned TF variant relation. In a recent review of applications of the TF relation and its variants, Giovanelli (1997b) has pointed out possible limitations in the approach proposed by Karachentsev (1989) and Chiba and Yoshii (1996), which result from uncertainties associated with the measurement of central disk surface brightnesses and disk scale lengths (see also Knapen & van der Kruit 1992 and Byun *et al.* 1994). While the highly desirable discovery of a superior form of the TF technique awaits confirmation, nearly edge-on spirals remain primary candidates for the application of most of its variants.

This work presents spectroscopic observations of a set of nearly edge-on galaxies extracted from the Karachentsev *et al.* (1993) catalog, carried out with the Arecibo telescope. The sample contains a number of objects observed previously for other purposes, which have been added to the present compilation. Details of the observations are briefly summarized and the parameters of the processed data are presented in a form that makes them suitable for large scale structure and distance determination studies, as well as for studies concerned with the global properties of this most interesting category of galaxies.

2. Observations

New HI line observations of cluster galaxies were conducted using the Arecibo 305m telescope during a number of separate observing periods between mid-1989 and early 1994. In

this section, a summary of the details of those observations is presented. A number of objects were observed previously, and those observations have been reprocessed for consistency in the final output of spectroscopic parameters.

The observing target list was obtained by selecting galaxies from the FGC and FGCA catalogs of Karachentsev *et al.* (1993), which are located between 0° and 38° in declination, and thus reachable by the Arecibo telescope. All but six of the galaxies were observed at Arecibo; the remainder were observed either with the Nançay telescope of the Observatory of Paris or with the 92-meter and 42-meter telescopes of the National Radio Astronomy Observatory.

The observational setup used for the new Arecibo observations is essentially that described in Giovanelli & Haynes (1989) and by Haynes *et al.* (1997), and we do not further expand on them here. Haynes *et al.* (1997) also describe in detail the growing impact of radio frequency interference (rfi) on extragalactic HI observations. Rfi affects with equal severity this set of data as the one presented in that reference.

In addition to the new observations, most HI line spectra obtained by us and our collaborators in the last decade are available in a digital archive. In order to achieve homogeneous velocity width measurements, all spectra presented here have been reanalyzed using the Arecibo ANALYZ-Galpac package following a uniform processing path. Final parameters derived from the reanalysis include fluxes, systemic velocities, and velocity widths for detected galaxies and limits on the rms noise per channel for undetected ones.

Of particular importance to the use of these spectra for TF applications, velocity widths for all galaxies have been measured using a new algorithm specifically designed to give both a more robust width measurement and a reliable quantitative assesment of the width error. The adopted algorithm measures W_{50} , defined as the full width across the profile measured at a level of 50% of each horn, where the appropriate level is identified by fitting a polynomial between the levels of 20% and 80% of the respective horn on each side of the profile. The velocity corresponding to the 50% level is estimated from the fitted polynomial rather than from the observed spectrum. In addition, we present a standard determination of the width measured at a level equal to 20% of the flux at the profile horns, for comparison with other work that uses that width estimator. This measurement is however far more susceptible to spectrum quality (i.e. signal-to-noise ratio), and the associated errors are typically larger than those on W_{50} .

A correction to the observed profile width for instrumental effects must account for the broadening of the profile produced by noise, smoothing and the non-zero spectrometer channel width. While smoothing the spectrum usually allows a better determination of the central velocity, it also increases systematically the measured width. In the current data set we have applied the simplest Hanning smoothing (convolution with a $[0.25, 0.5, 0.25]$ three-point function) in processing the available data, whether newly obtained or previously

published, whenever the signal-to-noise ratio of the data was sufficiently high. This form of smoothing is generally necessary in order to remove the $(\sin x)/x$ ringing introduced by narrow rfi features, therefore even very high signal-to-noise spectra were thus smoothed. In cases of very low signal-to-noise spectra, however, it was necessary to apply more robust smoothing, in order to reduce the noise to a tolerable level; in those cases, two successive smoothing steps were taken: first the spectrum was convolved with a 3-channel wide boxcar function, followed by Hanning as described above. To the measured widths, a statistically derived correction was later applied, which takes into consideration the broadening produced by the smoothing process. A record of the parameters required for the estimate of corrections to the observed W_{50} is maintained through our analysis process. The statistical derivation of the correction recipes will be presented elsewhere (Haynes *et al.*, in preparation).

Many of the observations reported here have been made for other purposes, besides those indicated in this paper. The largest overlap, of 153 objects, corresponds with an all-sky program of I-band TF distances of field Sbc and Sc galaxies (Giovanelli *et al.* 1997b). Entries for those galaxies are reproduced in this paper for completeness, and flagged accordingly.

2.1. Results for Detections

We present in Table 1 the results of the processing of the spectra for 587 galaxies. Figure 1 shows a sample of the HI spectra, including those of the first 16 galaxies listed in the table. The smoothed curve in each profile is the polynomial baseline subtracted from each spectrum before derivation of the emission properties. Strong, typically narrow band rfi is present in many of the spectra. A digital version of Table 1 and a copy of the complete Fig. 1 can be obtained upon request from RG.

Details of the entries in Table 1 are as follows:

Col 1: Entry number in the UGC (Nilson 1973), where applicable, or else in our private database, referred to as the Arecibo General Catalog (AGC).

Col 2: FGC or FGC Addenda designation.

Cols. 3 and 4: Right Ascension and Declination in the 1950.0 epoch, either from the literature or measured by us on the POSS-I. Typically, the listed positions have 15" accuracy. Although more accurate positions are now easily available, they were not at the time of the observations, and the positions actually used for the observations are reported here, unless otherwise indicated in the notes.

Col. 5: The blue major and minor diameters, $a \times b$, in arcminutes, from the FGC as estimated on blue POSS-1 prints.

Col. 6: The observed integrated 21 cm HI line flux $S = \int S_\nu d\nu$ in Jy-km s⁻¹.

Col. 7: The corrected integrated 21 cm HI line flux S_c , also in Jy-km s^{-1} , after corrections applied for pointing offsets (Arecibo only) and source extent following Haynes & Giovanelli (1984). For galaxies in this list for which UGC blue sizes are available, we use those for the estimate of the flux correction, as the relationship between HI size and optical size was obtained using that type of data; for other galaxies, we use the FGC size to estimate the flux correction.

Col. 8: The rms noise per channel of the spectrum, rms, in mJy.

Col. 9: The emission profile signal to noise ratio, snr, taken as the ratio of the peak flux to the rms noise, after smoothing as specified in col. 15 .

Col. 10: The heliocentric velocity V_\odot , in km s^{-1} , of the HI line signal, which is the midpoint of the profile at the 50% level also used to measure the width (see below). The error on the velocity is typically about 1.4 times smaller than that on the velocity width reported in col. 14.

Col. 11: The full velocity width W_{50} measured at the 50% level, in km s^{-1} , of the HI line, uncorrected for redshift of other effects. The measurement algorithm is discussed in Giovanelli *et al.* (1997a).

Col. 12: The full velocity width W_{20} measured at the 20% level, in km s^{-1} , of the HI line, uncorrected for redshift of other effects. This width is of lower quality than W_{50} .

Col. 13: Corrected 50% velocity width $W_{50,c}$, in km s^{-1} . The correction accounts for redshift stretch, instrumental broadening and smoothing during the processing phase. Note that this width is not rectified for either the viewing angle of the disk to the line of sight or for turbulent broadening.

Col. 14: The estimated error on $W_{50,c}$, ϵ_w , in km s^{-1} , taken to be the sum in quadrature of the measurement error and the estimated error in the instrumental and processing broadening corrections. The estimated error on W_{20} is typically larger than that for $W_{50,c}$, as it tends to be more affected by spectrum noise. A careful appraisal of that error was not carried out and thus such number is not reported.

Col. 15: A series of codes indicating the mode of the spectrometer configuration, smoothing applied, width quality and data source.

The first code refers to the telescope/spectrometer configuration of the final spectrum. Codes *a* and *o* refer to the Arecibo telescope, as follows: *a* : 20 MHz total bandwidth over 512 spectral channels; *o* : 10 MHz/252 channels; code *g* : 10 MHz/192 channels, data taken with the 92-meter telescope in Green Bank; code *b* : 10 MHz/512 channels, data taken with the 43-meter telescope in Green Bank and, finally, code *n* : 6.4 MHz/256 channels , data taken with the Nançay telescope.

The second letter is the smoothing code: H refers to Hanning only; B refers to convolution

with 3 channel boxcar followed by Hanning.

The third code is a qualitative assessment of the quality of the profile for TF applications: G = good; F = fair; M = marginal detection; C = confused; S = single peak and P = completely unfit for TF use. A designation of marginal detection is given to those cases in which the signal is of very poor signal-to-noise and has not been verified through adequate reobservation.

A final * in this column indicates the presence of comments in the following notes to Table 1, while a final *s* signifies that the galaxy is also part of the *Sc* galaxy project of Giovanelli *et al.* (1997b).

2.1.1. Notes to Table 1

100740=F36: blended or perturbed spectrum; possibly more than one gal in beam; spiral comp 2.5' S and UGC214 at 7' and vhel=5379.

819=F143: velocity of Schneider *et al.* (1990, ApJS 72, 245) not confirmed and prob. in error; our observations refer to two different epochs, in agreement with each other.

1773=F275: prob. interacting system; blend?

2097=FA40: marginal detection of second, weaker feature at vhel=3092, W=271 needs confirmation.

2159=F328: v. asymm profile.

2201=F337: U2204=N1067 and U2203=N1066 also in the beam; U2204 also detected; no confusion.

2344=F350: very marginal detection; parms highly uncertain; reading tea-leaves would suggest vhel~14730 as next likelier alternative.

130395=F435: other feature also detected and confirmed at vhel=8780; close to GPS rfi, but unlikely to be caused by it; some very low SB features within beam, visible on blue PSS.

130382=F464: 130383 also in beam, separated by 0.3', both Sc edge-on; two features in HI spectrum, respectively at vhel=6674, W=215 and vhel=5801, W=259; no blend. Identification of optical image with feature in radio spectrum impossible: tentative assignment arbitrary.

130383: see 130382

3005=F473: U3004 also in the beam and in the HI spectrum at vhel=3573; no blend.

180111=F726: two galaxies in beam; prob. blend. Caution with parms.

180620: serendipitously detected in “off” of 180611.

180605=F765: comp. in beam at 1.0' S; prob. blend.

180606=F772: comp. in beam at 0.8' W; prob. non-interfering detection at vhel=6884, W50=321, flux integral 0.39.

4591=F793: in tight group with U4589, U4595 and sev. other fainter spirals in vicinity. HI spectrum is blend: parms. of poor reliability for TF.

190712=FA110: v. asymmetric profile, possible contamination by rfi; unreliable for TF use.

190744=F913: strong standing waves in spectrum; S/N poor. Caution.

190716=F980: two features in HI spectrum, respectively at vhel=8016, W=386, and vhel=5700, W=207; smaller galaxy (190717) also in beam. Match of image and spectrum somewhat arbitrary.

6306=FA150: U6305 in beam; no confusion.

6428=FA152: 21cm observations made with the 300-foot telescope.

210559=F1287: asymm. profile, possibly confused.
6715=F1300: prob. interacting with comp. at 2'; blended profile.
211029=F1319: prob. confused with emission from sev. other objects in beam.
7510=F1429: blended with galactic HI, gas deficient; width unreliable.
7772=F1471: resolved, so that single beam doesn't collect full flux; high parm. unreliability, not reflected in measurement error.
9000=F1711: very asymm. profile: blend with U9001. Parm. unreliable.
9345=F1762: blend with U9346; parms. unreliable for TF work.
241183=F1832: feature detected at $v_{\text{hel}}=9313$, $W=63$, with no obvious optical counterpart.
250015=F1846: sev. comps. in vicinity: blend?
9760=F1863: feature detected at $v_{\text{hel}}=1858$, $W=35$, with no obvious optical counterpart.
9977=F1935: 21cm observations made with the Nançay telescope.
10027=F1949: asymm. spectrum.
251587=F1965: rugged, asymm. profile; width uncertain.
251333=F1968: blended profile; Sc comp., $0.6' \times 0.45'$, at $1.6'$ also in beam.
10219=F1989: also observed at Nançay, with $\text{flux}=13.88$, $v_{\text{hel}}=1368$, $W=209$.
10232=F1995: observed with telescope pointing at $\text{RA}=160732.3$; because of large position error, flux is underestimated.
10274=F2001: 21cm observations made with the 300-foot telescope.
10625=F2091: 21cm observations made with the 300-foot telescope. Gaussian profile.
10716=F2111: feature detected at $v_{\text{hel}}=9426$, $W=60$ partly blended with galaxy emission.
11093=F2176: 21cm observations made with the 140-foot telescope.
11132=FA253: 21cm observations made with the 300-foot telescope.
280138=F2187: marginal det. on edge of spectrum; parms uncertain; needs confirmation.
11142=F2188: 280139=F2189 at $5'$; no evidence of confusion in spectrum.
280139=F2189: detected on very edge of bandpass; parms. need confirmation.
12253=F2433: observed with beam centered $2.5'$ off in declination; parms uncertain, esp. flux.
12714=F2520: F2519 at $v_{\text{hel}}=5081$ also in the beam at $2'$; no confusion, as flux of F2519 is barely detected when pointing on it.
331175=F2639: detected serendipitously galaxy at $2352388+084709$, in "off" spectrum of this observation: $v_{\text{hel}}=5263 \pm 3$, $W50=163$.

2.2. Results for Non-detections

In addition to the detected objects, 157 galaxies were observed but not detected in the 21 cm line. In some cases, optical velocities are available and hence the rms noise per channel can be used to give an estimate of the upper limit to the HI mass. In other cases, where the redshift is not known, it is quite likely that the galaxy lies outside the velocity range covered by the search mode strategy.

A summary of the observations of undetected galaxies is presented in Table 2. Columns 1 through 6 list the FGC number, 1950.0 coordinates, blue diameters and UGC identification. In column 7, a graphic representation of the heliocentric velocity search range is given. The typical r.m.s. noise in the spectra is approximately 1.0 mJy, after 3-channel boxcar and hanning smoothing. All the reported non detections were obtained in the mode identified by the letter “a” in the description of col. 15 of table 1.

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Figure Captions

Fig. 1.— A sample montage of spectral profiles for the first 16 galaxies included in Table 1. The x-axis is heliocentric velocity in km s^{-1} ; the y-axis is flux in mJy. Instrumental baselines have not been removed from the data, but are indicated as smoothed curves superimposed to the data.

TABLE 1
DETECTIONS

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S_c	rms	snr	V_{\odot}	W_{50}	W_{20}	$W_{50,c}$	ϵ_W	Codes
95	16	000751.0	284240	1.98x0.16	4.78	5.68	1.83	11.5	7850	455	489	433	8.4	oHG _s
122	21	001042.0	164515	2.40x0.31	13.36	17.40	2.73	57.4	854	91	113	85	2.4	aHS
100726	A5	001104.5	152406	0.78x0.13	2.35	2.53	1.35	17.1	1943	130	145	121	5.4	aHG
135	24	001138.7	070807	1.01x0.11	2.00	2.21	1.23	9.3	5836	220	248	204	5.0	oHG
100727	31	001700.2	182253	1.12x0.09	2.65	2.91	0.89	21.3	5287	153	172	143	2.8	aHG
100728	A6	001708.3	153450	0.76x0.11	0.67	0.72	0.59	8.6	10842	340	356	316	5.9	aHG
201	34	001825.9	072047	1.23x0.11	2.42	2.68	1.20	10.9	11838	443	467	415	6.6	oHG
100740	36	001934.0	100615	0.90x0.11	2.37	2.57	0.93	16.2	5446	203	280	191	4.5	aHG *
211	37	001939.3	201947	1.04x0.15	1.87	2.06	0.87	11.9	5638	233	261	219	3.3	oHG
222	39	002028.9	345213	0.76x0.10	0.94	1.04	1.41	4.9	6117	187	216	152	16.9	aHF
100729	40	002030.2	204143	0.71x0.10	0.67	0.72	0.64	7.4	5410	178	195	162	7.8	aHG
290	51	002630.0	153700	2.24x0.22	6.61	8.04	2.41	37.8	767	75	98	69	2.5	aHS
294	53	002644.3	310700	1.12x0.09	2.17	2.40	1.02	9.6	6335	257	297	240	11.4	oHG _s
316	59	002900.2	142016	1.40x0.13	4.06	4.58	2.15	7.2	11430	508	541	476	13.5	oHG
320	60	002956.6	021800	1.34x0.19	3.26	3.64	2.48	11.3	2374	152	178	141	7.5	oHG _s
371	65	003442.0	285226	2.24x0.17	3.83	4.50	1.32	12.6	5278	328	348	313	3.9	oHG _s
379	67	003522.5	045216	1.34x0.16	2.85	3.16	0.96	19.0	5226	205	222	194	2.8	aHG _s
100730	68	003533.0	105833	1.09x0.11	1.52	1.67	0.89	9.0	11618	322	347	298	5.9	aHG
418	70	003704.3	084134	1.97x0.28	6.33	6.94	1.61	16.4	4437	371	391	357	3.0	oHG
433	74	003821.4	312740	2.12x0.25	6.36	7.57	1.65	11.9	4656	429	454	413	4.7	aHG _s
100762	76	003829.8	251830	1.05x0.11	0.92	1.01	1.07	3.8	10046	354	410	308	84.5	aBM
100731	77	003835.2	144635	0.90x0.12	1.95	2.11	0.96	12.2	5043	241	261	227	5.6	aHG
100732	78	003854.9	103653	1.01x0.08	2.16	2.36	0.77	11.2	11868	359	382	331	5.5	aBG
474	85	004237.5	101353	1.12x0.13	1.36	1.48	0.49	12.1	11965	404	430	378	3.3	aHG
485	89	004420.9	300357	2.50x0.21	6.58	8.11	1.33	23.7	5248	354	377	341	3.5	aHG _s
501	91	004621.0	275647	1.95x0.22	4.05	4.76	1.34	11.9	5086	384	403	368	7.5	oHG _s
507	92	004701.7	005037	2.18x0.21	6.65	8.21	2.87	8.8	5282	437	463	417	5.9	oHG _s
100750	93	004752.2	044702	0.73x0.09	1.14	1.22	0.75	8.1	11250	306	333	278	9.2	aBG
100733	94	004758.3	140950	0.90x0.11	1.09	1.18	0.72	7.6	9107	263	293	242	9.6	aHG
100723	A12	004805.7	301528	0.90x0.16	1.55	1.68	1.11	9.6	6697	188	235	173	6.7	aHG
100763	96	004817.7	003447	1.01x0.11	1.60	1.75	1.71	6.4	4572	184	209	165	7.3	aHG
100734	99	004930.8	141355	0.71x0.08	1.51	1.62	0.77	12.7	9116	212	234	196	3.9	aHG
100724	100	005008.6	312149	0.78x0.08	1.65	1.77	1.66	6.3	8277	250	271	226	8.3	aHG
541	101	005029.5	213906	1.20x0.13	2.01	2.23	0.77	12.8	7303	274	294	258	3.2	aHG _s
542	102	005044.0	290000	3.14x0.43	10.96	13.70	1.15	44.7	4510	375	393	364	2.5	oHG
100725	104	005049.5	280023	1.10x0.09	3.12	3.43	1.25	10.1	7501	398	417	377	4.9	aHG
544	105	005058.2	023913	1.71x0.21	2.39	2.78	1.42	6.8	4907	379	402	360	7.8	aHG _s
619	114	005710.0	142720	1.19x0.11	2.51	2.80	1.05	10.1	12197	412	439	385	5.8	oHG
631	116	005826.3	092716	1.68x0.15	4.27	4.96	1.18	18.2	6044	317	336	303	2.9	aHG _s
653	119	010103.9	305553	1.01x0.12	2.80	3.05	2.07	7.2	6263	273	296	254	9.6	aHG
723	128	010714.4	203017	1.85x0.12	3.04	3.57	1.11	15.7	5094	249	272	236	3.0	aHG _s
110756	129	010732.0	285554	0.73x0.10	1.63	1.75	1.52	8.3	4651	151	169	136	5.1	aHG
764	136	011024.5	344153	1.10x0.10	1.68	1.84	1.27	8.4	4741	213	233	198	5.9	aHG _s
819	143	011324.0	062250	1.25x0.11	0.70	0.76	1.06	9.4	2417	109	123	97	7.6	aHF *
876	153	011810.7	035500	1.12x0.11	1.45	1.58	1.56	5.6	5084	226	244	199	12.5	aHG
110770	A16	011817.5	010001	0.59x0.09	1.03	1.10	1.17	6.8	10062	209	235	189	19.3	aHG
110778	157	012041.6	140014	0.67x0.07	1.20	1.28	1.02	6.3	11256	289	306	258	8.8	aBG
110298	159	012111.1	282221	0.99x0.11	1.88	2.05	1.35	12.4	4125	127	160	116	3.2	aHG

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S_c	rms	snr	V_{\odot}	W_{50}	W_{20}	$W_{50,c}$	ϵ_W	Codes
955	161	012148.9	152826	1.27x0.16	4.46	4.90	0.85	25.1	5049	264	286	253	2.0	aHGs
958	162	012153.1	161626	1.83x0.24	4.89	5.75	2.29	14.0	2419	160	178	150	4.6	oHGs
970	163	012207.8	094403	2.63x0.35	0.87	1.15	0.47	10.6	2725	369	407	355	4.8	aHGs
1054	170	012557.3	340508	1.76x0.10	3.61	4.07	3.53	8.4	2659	172	190	158	11.4	oHG
1066	A17	012631.4	314820	1.14x0.18	2.48	2.80	0.97	18.3	5068	169	189	158	3.6	aHG
1082	A18	012813.2	165546	2.97x0.59	5.47	7.25	1.83	10.9	2801	391	410	377	6.6	oHG
1103	171	013000.0	113426	1.03x0.11	1.77	1.94	0.94	6.8	10672	399	429	366	15.8	aBG
1160	179	013513.0	321417	1.83x0.19	1.97	2.29	1.18	7.6	5446	308	340	289	9.6	oHGs
1165	180	013542.5	282806	1.53x0.18	2.36	2.66	1.11	8.2	10901	422	444	394	6.0	oHG
1178	183	013734.8	342220	2.02x0.28	11.53	13.91	3.91	12.4	5505	370	416	353	16.2	oHG
1181	184	013748.9	141610	1.12x0.11	2.33	2.56	1.06	11.6	8126	283	296	265	4.0	oHG
110790	191	014138.7	274021	1.79x0.13	7.46	8.75	1.43	32.8	4037	192	209	183	2.6	aHG
1224	192	014217.9	315233	1.12x0.11	2.25	2.47	1.91	5.7	11218	430	471	391	10.8	aHG
1377	206	015153.5	164800	1.34x0.17	3.20	3.57	1.54	13.5	4764	227	246	214	5.5	aHG
1391	208	015237.7	094600	1.57x0.17	2.75	3.13	0.95	12.7	5901	399	431	382	4.7	aHGs
110791	209	015252.8	163348	0.92x0.11	2.51	2.72	0.91	13.9	9684	300	321	281	3.1	aHG
1410	213	015340.7	042410	2.05x0.22	4.99	5.87	1.73	11.6	4975	368	395	352	4.8	oHGs
1417	215	015358.7	172754	1.03x0.09	2.10	2.40	1.19	9.6	11430	324	343	300	5.0	oHG
1452	217	015543.9	215133	1.12x0.15	3.21	3.63	2.57	10.0	4977	177	200	163	11.4	oHG
1459	218	015609.2	354914	1.77x0.22	1.62	1.86	1.19	6.5	5469	380	401	353	16.8	aBGs
1461	219	015616.5	052105	1.29x0.13	0.97	1.08	0.63	7.6	5831	263	284	245	6.8	aHGs
1470	223	015647.4	315015	1.70x0.19	2.78	3.23	2.06	8.2	5165	240	256	223	7.7	oHG
110792	225	015741.0	154323	0.94x0.11	2.03	2.20	0.88	16.4	5063	183	207	172	4.5	aHG
110758	227	015812.5	192750	0.91x0.09	2.15	2.33	1.24	10.5	5620	229	259	214	7.5	aHG
1542	230	020030.0	022233	2.07x0.29	4.87	5.66	1.51	11.7	6387	495	514	474	6.5	oHG
120992	A27	020130.6	101259	0.73x0.12	1.24	1.33	0.86	7.0	11703	342	368	315	7.0	aHG
1575	236	020220.9	242544	1.37x0.12	4.10	4.54	2.03	15.1	4840	206	230	194	4.6	oHG
1576	237	020226.1	294607	1.02x0.11	1.50	1.66	0.72	12.8	5234	176	231	163	3.1	aHGs
120863	243	020344.6	132530	0.92x0.10	1.80	1.95	0.73	11.4	9043	307	325	288	4.8	aHG
1600	244	020402.1	011637	1.29x0.13	3.77	4.21	1.53	11.4	6816	359	397	341	6.5	aHGs
1677	256	020824.9	062553	0.90x0.08	0.40	0.44	1.23	5.6	1608	102	129	77	29.6	aBM
1683	257	020841.1	154020	0.96x0.12	1.24	1.35	1.07	6.3	7810	319	349	293	11.0	oHGs
1714	261	021056.1	100616	1.16x0.15	5.15	5.76	2.29	19.3	3596	151	170	141	4.5	oHG
1733	266	021231.9	214606	1.79x0.11	6.02	7.00	1.23	27.6	4418	275	297	264	2.6	aHGs
1732	267	021236.6	182653	1.09x0.09	1.85	2.03	1.18	9.0	8217	366	381	344	11.4	oHG
1754	A35	021406.2	304247	0.78x0.22	2.08	2.32	0.92	8.9	10157	301	344	279	7.6	aHG
120994	271	021433.3	075136	0.78x0.08	1.80	1.93	0.86	11.5	10043	275	294	256	4.8	aHG
1773	275	021533.7	125824	1.79x0.24	5.79	6.67	2.02	23.8	3614	183	229	174	20.1	oHF *
1817	280	021847.2	135819	2.52x0.22	9.28	12.09	1.76	20.8	3744	391	419	379	2.8	oHGs
1820	279	021848.0	324727	2.13x0.24	5.20	6.13	3.11	9.2	3947	218	277	204	8.5	oHGs
1822	281	021902.9	163846	1.48x0.17	2.33	2.60	1.27	8.2	3966	313	331	296	5.1	oHGs
1856	287	022133.9	312313	2.24x0.25	11.01	13.61	1.60	38.6	4804	254	279	244	2.5	oHG
1870	290	022212.9	192834	1.34x0.17	2.46	2.80	1.03	6.6	10593	620	643	579	30.4	oBM
1898	292	022334.1	224635	1.27x0.17	2.69	3.07	1.43	6.7	10190	484	517	454	10.7	oHG
1924	296	022451.9	313013	2.39x0.34	7.29	8.67	2.65	27.7	598	105	125	98	3.4	oHG
1934	A37	022517.6	001633	1.68x0.31	3.47	4.14	2.05	6.2	12275	563	574	522	10.2	aHG
1946	299	022542.0	152312	1.90x0.13	5.80	6.89	2.37	16.4	4080	209	232	194	3.6	oBGs
1970	303	022702.8	250200	2.13x0.27	5.29	6.53	2.10	13.7	1915	228	243	217	5.5	oHGs

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S _c	rms	snr	V _☉	W ₅₀	W ₂₀	W _{50,c}	ϵ_W	Codes
1999	309	022904.1	185550	4.03x0.56	17.95	25.10	2.10	61.9	972	148	170	142	1.7	oHGs
120865	310	022956.5	152958	0.90x0.11	1.52	1.65	1.09	9.6	5873	217	238	202	4.9	aHG
2025	312	023024.0	251807	1.42x0.16	2.40	2.68	1.12	6.8	11082	485	532	454	18.3	oHG
2048	314	023120.5	321713	4.03x0.47	8.77	13.95	2.56	13.4	4855	585	609	566	11.3	oHG
2092	320	023351.8	070537	2.89x0.22	10.76	15.37	0.96	34.9	6122	438	472	420	4.6	oBGs
120995	321	023407.0	252430	1.02x0.11	2.41	2.63	1.00	6.7	10835	533	576	495	12.1	aBG
2097	A40	023419.2	051400	1.05x0.16	1.35	1.48	1.01	9.8	6394	176	194	161	4.1	aHG *
2129	325	023543.6	020552	1.55x0.25	3.80	4.38	4.90	4.1	5825	391	409	349	24.6	oHF
120997	326	023600.0	103325	1.01x0.10	2.59	2.83	1.13	13.4	7916	269	295	249	7.7	aBG
2159	328	023729.5	295200	1.14x0.12	2.68	2.94	1.68	14.7	5191	163	197	151	6.4	aHFs*
2171	329	023854.0	315227	1.61x0.17	2.19	2.45	1.54	9.6	4561	223	238	208	8.5	oHGs
2201	337	024043.1	321700	2.02x0.28	5.27	6.14	1.82	11.5	4130	324	379	309	6.5	oHGs
2211	338	024110.6	062547	1.48x0.21	3.32	3.71	1.48	9.9	6111	313	337	296	4.9	oHGs
2221	339	024158.7	301000	1.57x0.13	3.76	4.37	4.74	7.8	832	105	135	92	9.5	oHG
2344	350	024917.1	134153	1.06x0.15	0.62	0.68	1.26	4.2	14869	209	266	165	95.4	aBM
2378	358	025140.6	113246	1.68x0.19	4.56	5.26	2.56	8.1	7399	386	408	364	8.6	oHG
2382	359	025158.7	090913	1.15x0.11	3.67	4.03	1.60	10.8	7521	370	391	350	12.3	aHG
121023	362	025311.5	272940	1.10x0.11	2.67	2.93	1.10	14.2	6472	233	256	216	5.1	aBG
2404	363	025314.2	005233	1.23x0.11	3.02	3.37	1.19	15.4	5034	290	303	277	3.7	aHGs
2441	368	025545.2	033947	3.02x0.40	5.65	6.99	2.67	11.3	3053	270	292	253	6.1	oBGs
121045	A49	025749.6	050715	1.01x0.17	2.37	2.58	1.28	11.5	8452	200	245	184	6.6	aHG
121048	378	025908.0	253539	0.94x0.12	1.94	2.11	0.75	12.1	6786	260	283	241	5.3	aBG
2523	383	030234.0	005413	1.68x0.22	5.94	7.09	2.15	13.6	6951	362	389	344	8.4	oHGs
2540	385	030352.4	355836	1.96x0.21	6.47	7.69	2.36	9.0	3934	417	441	396	8.1	oBG
2563	390	030646.8	181839	1.55x0.18	3.50	4.03	0.83	11.8	10730	540	566	511	5.7	oHG
2695	411	031833.7	071542	1.37x0.12	3.39	3.90	1.49	6.1	10983	494	569	457	28.5	oHF
2701	416	031954.4	091740	1.40x0.15	3.73	4.07	1.29	11.2	7285	515	552	492	4.8	aHGs
130375	417	032040.2	105829	2.46x0.27	10.23	13.04	1.37	35.8	6167	295	320	283	2.6	aHG
130376	418	032116.7	145532	0.90x0.12	1.04	1.13	0.63	8.0	10517	336	362	307	7.5	aBG
2727	423	032229.4	050334	1.21x0.10	2.34	2.62	1.36	7.9	8828	367	387	344	10.5	oHG
130391	425	032337.2	011405	0.81x0.08	0.96	1.03	1.25	5.2	10103	215	235	179	26.1	aBF
130392	428	032442.5	034459	0.75x0.10	2.32	2.49	1.42	9.3	6661	198	228	178	10.8	aBG
130393	429	032452.6	084921	1.18x0.07	0.95	1.05	0.51	8.3	11385	576	629	538	13.7	aBG
130394	432	032912.7	143638	0.76x0.09	0.85	0.91	0.63	7.3	8630	413	427	383	6.9	aBG
2781	433	033010.9	154224	1.46x0.10	3.27	3.72	0.80	11.6	9328	501	534	476	6.6	oHG
130395	435	033151.6	115353	1.21x0.16	2.04	2.26	0.70	13.2	10464	474	494	445	5.2	aBG *
130402	436	033200.8	145825	1.03x0.10	4.06	4.43	1.02	22.4	6218	256	275	243	2.7	aHG
130379	439	033641.1	131358	1.10x0.12	1.44	1.58	0.67	7.4	9885	447	500	414	7.6	aBG
130380	442	033757.7	032233	0.90x0.11	3.37	3.65	1.18	18.3	5733	220	239	205	4.9	aBG
130396	443	033815.3	132450	1.40x0.16	1.12	1.26	0.64	6.2	10054	484	529	448	9.6	aBG
130381	A60	033839.5	132448	1.01x0.16	0.92	1.00	0.49	6.3	9990	533	601	495	13.1	aBG
2823	444	033846.3	155136	1.46x0.18	2.17	2.50	1.07	6.3	9117	560	585	526	11.0	oHG
130397	A62	034103.5	140827	1.12x0.19	4.30	4.73	0.75	23.4	6541	375	428	357	4.8	aBG
2852	446	034215.8	054454	1.81x0.13	8.02	9.32	1.80	21.2	6101	352	372	334	4.8	oBG
130398	455	034625.3	155559	0.78x0.11	1.78	1.91	0.75	11.4	6383	284	308	264	5.3	aBG
2899	458	035144.6	062630	1.53x0.17	6.10	6.95	1.65	19.1	3471	245	273	231	4.1	oBG
2915	461	035644.0	322813	1.14x0.13	4.39	4.87	1.95	11.8	5304	293	315	278	4.7	aHGs
130399	A65	035652.8	011555	0.67x0.11	1.25	1.34	1.40	4.8	9111	302	348	260	18.1	aBF

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S _c	rms	snr	V _☉	W ₅₀	W ₂₀	W _{50,c}	ϵ_W	Codes
130382	464	035837.8	244057	0.81x0.11	1.45	1.56	0.80	9.0	5801	259	276	238	5.0	aBG *
130383	464b	035837.8	244037	0.62x0.17	1.64	1.75	0.80	11.0	6674	215	239	196	5.4	aBG *
140132	A66	040228.1	060323	0.65x0.11	2.19	2.34	1.07	12.0	5508	233	254	219	3.2	aHG
140145	467	040444.6	331818	0.97x0.09	2.20	2.39	0.99	12.8	4843	211	233	198	3.9	aHG
3005	473	041444.2	021947	1.21x0.12	4.92	5.41	3.33	9.3	3215	193	241	179	7.6	oHG *
3009	474	041602.8	260337	1.79x0.25	5.47	6.46	1.19	22.4	3751	261	281	250	2.1	aHG _s
140153	475	041610.1	030622	1.01x0.13	1.42	1.55	1.27	3.9	7434	444	536	399	18.2	aBM
140136	483	042236.0	045217	0.99x0.09	2.23	2.43	1.27	11.3	4951	231	248	217	4.8	aHG
3054	485	042539.7	005731	1.42x0.16	1.90	2.19	1.74	8.0	3895	212	227	197	5.9	aHG
140146	492	043130.0	011829	0.92x0.09	1.90	2.06	1.94	4.7	10071	316	378	272	17.3	aHG
3107	A73	043437.8	092638	1.23x0.20	3.20	3.53	0.98	11.5	8361	465	489	442	3.3	aHG
3161	503	044402.8	003200	1.57x0.13	4.16	4.64	1.71	8.7	8781	506	601	480	7.7	aHG
140147	505	044516.7	083719	1.90x0.15	3.87	4.60	1.40	13.4	4732	352	376	337	5.5	aHG
140148	507	044705.3	002340	0.80x0.11	2.75	2.96	1.56	7.7	8485	362	395	339	7.7	aHG
3186	510	044908.9	033513	2.02x0.20	7.55	8.79	2.31	21.5	4578	248	266	237	3.5	aHG _s
150063	527	051305.5	064319	1.12x0.13	3.57	3.90	0.97	14.4	8196	366	398	347	3.1	aHG _s
3275	528	051404.0	063403	2.02x0.31	4.34	5.18	1.16	10.7	7965	513	565	489	4.1	aHG _s
3551	586	064634.7	293457	1.29x0.11	4.83	5.30	1.15	15.6	4814	372	457	357	5.5	aHG
3573	589	064839.9	273229	2.77x0.21	7.18	8.65	1.22	23.8	4831	455	474	441	3.5	aHG
170342	603	070648.5	234746	0.90x0.11	1.96	2.12	0.97	15.9	6596	173	201	161	5.5	aHG
3736	A86	070917.9	232755	1.88x0.34	5.85	6.55	1.02	18.7	9875	502	557	478	2.9	aHG
3763	610	071142.4	345409	1.09x0.13	3.13	3.42	1.84	9.8	7163	312	366	294	11.4	aHG
170343	613	071320.5	330237	1.03x0.13	1.60	1.75	0.94	8.9	7310	250	268	232	5.8	aHG
170355	614	071331.5	302108	0.91x0.09	2.50	2.71	1.73	11.5	3287	179	201	167	4.7	aHG
170344	618	071424.2	223628	1.24x0.15	2.83	3.14	0.93	10.8	9642	453	479	428	4.8	aHG
3782	619	071436.0	232700	4.26x0.35	30.50	46.33	2.07	37.5	2275	344	373	335	3.4	aHG _s
3783	620	071450.0	245020	1.21x0.11	3.85	4.34	0.86	18.3	6182	371	387	355	2.3	aHG _s
3784	621	071452.7	264417	1.79x0.12	4.91	5.39	1.75	16.6	2592	203	220	193	2.9	aHG
3820	626	071927.1	172300	1.68x0.21	8.24	9.50	1.11	35.2	2530	309	329	300	1.8	aHG
12926	629	072155.6	061500	1.12x0.08	3.80	4.18	2.00	10.3	3839	230	261	216	5.7	aHG
170345	632	072544.1	282940	0.88x0.11	1.95	2.11	0.92	10.9	6476	215	238	200	4.8	aHG
170357	634	073027.7	203408	0.64x0.08	1.50	1.60	0.97	6.9	8654	313	377	292	7.7	aHG
170346	645	073435.5	322002	1.12x0.15	2.76	3.04	1.04	12.5	8133	369	392	349	3.9	aHG
170347	650	073731.3	261509	1.23x0.13	3.30	3.66	0.81	15.6	8389	397	415	377	3.7	aHG
170348	A89	073934.0	264400	0.78x0.13	1.64	1.76	1.19	7.9	8150	216	230	198	5.2	aHG
170349	660	074457.4	283143	1.23x0.12	3.18	3.53	0.95	19.0	4722	202	227	191	2.8	aHG
170358	661	074510.0	285029	0.72x0.10	1.29	1.38	0.90	10.2	6855	214	233	198	4.9	aHG
4032	662	074527.2	301651	1.46x0.16	4.17	4.58	1.36	12.4	8123	368	406	348	3.9	aHG
170376	663	074534.3	363048	1.05x0.12	1.17	1.28	1.12	4.9	8544	365	380	323	15.3	aBG
170377	672	074941.5	241505	1.00x0.11	1.48	1.61	0.66	7.5	13683	526	563	485	6.9	aBG
170350	677	075108.5	325414	0.84x0.11	2.29	2.47	1.26	10.8	5307	226	254	212	5.7	aHG
170359	683	075143.5	363541	0.86x0.12	3.22	3.48	2.22	10.0	6066	220	248	205	6.6	aHG
170351	684	075234.5	285219	0.96x0.08	1.54	1.67	0.97	13.1	6384	162	189	149	5.6	aHG
170360	685	075250.5	342917	0.81x0.11	3.74	4.03	1.29	18.0	4759	178	207	167	4.5	aHG
4113	688	075407.6	313613	1.06x0.10	2.70	2.94	1.05	17.1	5270	207	231	195	2.3	aHG
170378	694	075636.0	264132	1.19x0.16	1.44	1.59	0.96	6.6	7403	391	409	367	4.9	aHG
180619	706	080119.6	360823	0.96x0.09	3.02	3.28	1.77	10.9	5587	202	221	188	6.6	aHG
180611	A96	080648.5	292601	0.56x0.09	1.00	1.06	0.86	8.3	8442	190	205	172	5.1	aHG

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S_c	rms	snr	V_{\odot}	W_{50}	W_{20}	$W_{50,c}$	ϵ_W	Codes
4257	720	080710.0	250227	2.18x0.17	10.75	13.42	1.43	33.0	4162	251	283	241	2.6	aHG _s
180601	A99	080946.8	230333	0.80x0.17	3.27	3.51	0.94	23.2	4316	181	200	171	2.7	aHG
180111	726	081005.4	244307	0.78x0.10	4.30	4.60	0.87	18.9	6136	315	363	301	3.6	aHS *
180141	734	081225.1	214239	1.39x0.18	1.29	1.43	0.89	8.1	4269	277	302	261	5.1	aHG _s
4296	735	081247.5	082953	1.30x0.11	4.42	4.85	1.41	14.0	9008	290	341	272	3.1	aHG
180620		081249.5	292700		3.94		1.07	14.2	8380	465	537	440	7.7	aBG *
4299	736	081302.0	232108	2.17x0.24	3.91	4.71	0.78	16.2	4282	399	429	385	3.4	aHG _s
180613	746	082103.6	342912	1.14x0.10	2.60	2.86	1.46	12.5	5199	223	253	210	7.4	aHG
180602	749	082140.3	221042	1.12x0.13	0.85	0.93	0.74	7.8	4704	231	250	215	5.1	aHG
180621	751	082154.5	323951	1.34x0.18	2.98	3.34	1.14	7.8	13626	547	642	505	17.6	aBG
180603	754	082218.8	302611	0.78x0.11	1.52	1.63	0.96	8.2	7643	243	257	225	4.4	aHG
4395	755	082238.3	281700	2.02x0.21	2.74	3.22	1.37	13.2	2192	206	225	195	3.8	aHG
4400	756	082310.5	215000	1.79x0.12	7.10	8.24	1.41	32.0	4392	225	248	215	1.9	aHG _s
180604	762	082739.1	195432	1.01x0.11	2.58	2.79	0.93	21.1	4646	184	201	174	2.8	aHG
4446	763	082747.1	204610	1.12x0.11	3.81	4.22	0.88	16.3	6011	347	367	332	2.9	aHG
180605	765	082907.3	194413	1.02x0.10	3.13	3.40	0.94	13.8	8682	298	321	280	4.7	aHG *
180614	767	082945.0	034014	0.65x0.09	0.61	0.65	0.93	5.1	9098	204	224	168	12.6	aBM
180615	A100	083217.6	273924	0.73x0.11	0.93	1.00	0.90	6.8	8388	206	233	187	8.7	aHG
180606	772	083337.5	251904	1.00x0.12	1.03	1.12	0.61	7.1	8666	483	507	456	6.9	aHG *
4524	780	083735.5	054843	1.68x0.18	6.17	6.96	1.54	27.8	1939	158	176	150	2.6	aHG
4532	783	083849.9	190310	1.77x0.17	5.18	5.96	1.26	21.3	4622	234	261	223	2.8	aHG _s
4559	A103	084103.9	301808	4.20x0.67	11.53	15.97	1.54	31.0	2085	353	371	344	2.6	aHG
4565	789	084139.4	094314	1.23x0.10	3.15	3.43	1.19	17.0	4065	232	263	221	4.5	aHG
4588	792	084344.4	191210	1.81x0.24	4.59	5.35	1.02	22.5	4264	273	291	262	2.1	aHG _s
4591	793	084357.1	282516	1.57x0.20	1.99	2.24	0.44	11.5	6435	346	484	329	44.1	aHF _s †
4611	796	084547.4	300320	2.13x0.19	4.81	5.65	1.69	12.2	5964	403	425	385	7.4	aHG _s
180622	799	084729.6	352039	0.80x0.11	2.06	2.22	1.52	6.1	16770	495	530	447	20.8	aBF
4625	800	084741.3	034107	1.68x0.10	9.11	10.58	2.04	14.4	8471	431	476	410	3.8	aHG
4655	808	085054.6	045809	1.43x0.09	2.73	3.02	1.27	11.5	6190	282	307	266	3.3	aHG _s
4657	810	085109.7	185207	1.79x0.21	5.80	6.60	1.11	27.3	4358	277	299	266	2.0	aHG
180607	817	085339.0	213413	0.81x0.10	0.47	0.51	0.52	5.4	7803	239	316	206	11.3	aBF
180608	819	085542.0	311813	0.87x0.08	1.39	1.50	0.98	8.6	9148	322	354	300	5.9	aHG
4725	825	085752.8	321127	1.57x0.12	3.55	4.04	1.54	20.1	1997	138	161	129	3.6	aHG
190690	842	090438.3	285023	1.10x0.10	1.32	1.45	0.93	6.9	6691	306	399	287	7.7	aHG
4792	844	090514.7	204210	1.46x0.19	3.09	3.39	0.86	17.4	7678	365	404	348	5.4	aHG
4828	850	090820.9	195222	1.80x0.12	2.90	3.33	1.11	10.3	8982	459	494	435	8.5	aHG
190708	854	090944.1	181057	0.64x0.09	1.70	1.81	1.30	7.9	6256	210	249	193	11.5	aHG
190709	859	091107.6	295644	0.66x0.08	0.80	0.85	0.91	6.0	6323	231	252	206	8.7	aHG
4925	870	091532.2	175753	1.81x0.20	5.89	6.85	1.02	46.0	3013	206	223	198	1.8	aHG
190710	872	091605.1	311854	0.85x0.10	1.39	1.50	1.12	8.9	7441	312	339	293	7.6	aHG _s
4943	873	091650.9	372412	2.63x0.47	11.95	15.77	3.27	17.6	2266	382	401	371	22.1	aHG
4949	874	091700.0	331848	1.23x0.13	2.31	2.54	1.31	8.0	6389	388	426	367	5.9	aHG _s
190711	887	092204.3	242924	0.63x0.09	0.85	0.91	0.46	10.3	8133	248	312	231	9.4	aHG
190277	888	092231.5	122212	1.23x0.11	3.34	3.71	1.48	11.8	8655	292	310	274	5.6	aHG
5014	890	092239.3	350425	1.23x0.10	2.76	3.03	1.48	13.6	4872	183	204	171	4.6	aHG
190712	A110	092555.2	161641	0.55x0.09	1.77	1.88	0.71	11.5	8578	218	340	202	4.8	aHP *
190713	901	092917.5	122857	0.76x0.09	0.83	0.89	0.83	5.9	5899	226	244	201	8.0	aHG
190700	912	093300.0	230849	0.90x0.09	1.04	1.13	0.75	9.9	7657	189	214	173	6.6	aHG

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S_c	rms	snr	V_\odot	W_{50}	W_{20}	$W_{50,c}$	ϵ_W	Codes
190744	913	093346.6	154621	1.10x0.10	1.72	1.89	2.67	4.8	4329	189	242	154	14.5	aHG *
5121	914	093420.8	140722	1.59x0.19	3.77	4.29	1.43	12.3	8578	388	409	367	3.9	aHG
5148	918	093652.2	114416	1.21x0.17	3.58	3.94	1.22	10.8	5900	352	377	335	4.8	aHG
5149	919	093656.5	211328	1.12x0.10	2.63	2.87	0.90	16.1	4733	236	258	224	2.9	aHG
190714	921	093721.0	340216	0.77x0.10	1.88	2.02	1.36	5.8	11733	403	426	366	9.1	aHG
190701	923	093754.6	315801	0.96x0.11	1.94	2.11	0.93	11.3	6777	268	285	252	4.0	aHG
5194	930	094032.3	341617	1.32x0.16	3.89	4.30	1.35	12.0	8505	369	401	349	5.6	aHG
190738	934	094212.5	305218	0.60x0.08	0.81	0.86	0.85	6.2	10374	227	256	201	8.5	aHG
5235	939	094405.0	231520	1.52x0.13	4.16	4.69	1.06	17.7	7290	384	417	367	2.9	aHG
190702	943	094444.5	240813	1.01x0.09	1.58	1.72	0.94	9.0	7142	247	302	230	7.6	aHG
5248	945	094506.5	160507	1.70x0.19	10.59	12.31	1.19	29.4	5850	517	549	500	3.4	aHG _s
190703	950	094557.7	331640	0.99x0.11	1.08	1.18	0.84	8.6	6617	221	240	204	6.7	aHG
5258	952	094642.8	145326	1.75x0.15	4.60	5.19	1.27	14.5	5922	319	344	304	3.0	aHG _s
5314	967	095111.4	090657	1.12x0.12	2.04	2.24	0.84	12.6	6410	288	309	272	3.9	aHG
190704	969	095145.5	295714	1.21x0.11	1.43	1.58	0.95	8.3	6461	252	270	234	5.1	aHG
190739	A112	095223.7	360506	0.83x0.12	1.32	1.42	1.68	3.3	9661	675	721	620	23.7	aBM
190715	A113	095224.3	134541	0.78x0.12	0.92	0.99	1.06	5.4	7541	191	257	161	14.6	aHG
5341	976	095349.6	205310	3.10x0.21	11.21	15.13	1.38	23.3	7569	605	637	583	2.7	aHG
5347	979	095440.5	044553	1.77x0.15	5.77	6.57	1.26	24.4	2156	219	242	210	2.0	aHG
190716	980	095443.7	361834	0.95x0.09	2.37	2.57	1.66	6.7	8016	386	424	362	27.2	aHG *
190718	985	095710.1	342437	0.78x0.11	1.80	1.93	1.51	7.8	5111	206	255	190	8.6	aHG
190719	986	095733.8	352354	1.01x0.10	1.83	2.00	1.65	8.8	5877	176	198	161	6.7	aHG
190740	987	095750.8	354301	1.19x0.10	2.66	2.94	1.77	6.4	11418	390	429	359	9.1	aHG
5392	992	095848.1	215049	1.23x0.12	1.52	1.68	0.77	8.0	6209	375	394	355	5.9	aHG
5413	1000	100046.4	132045	1.12x0.11	2.29	2.50	0.97	14.8	8304	325	345	307	5.5	aHG
5426	1005	100147.2	150039	1.40x0.11	2.32	2.64	1.10	10.9	6972	414	429	394	5.7	aHG _s
5431	1008	100212.5	214647	1.25x0.16	4.19	4.68	1.60	18.0	3963	189	216	178	5.4	aHG
5452	A118	100417.2	331627	3.08x0.45	22.07	28.33	1.94	60.4	1342	205	229	199	1.7	aHG _s
200874	1026	100749.3	333122	0.92x0.10	2.56	2.78	1.23	13.6	8269	347	366	328	6.5	aHG
5495	1031	100910.1	164113	2.97x0.32	12.32	16.91	1.48	22.6	8250	558	579	536	2.8	aHG
5514	1038	101100.0	182230	1.65x0.20	3.75	4.15	1.66	18.4	3662	180	209	170	2.8	aHG
5524	1040	101136.0	222223	1.83x0.22	2.78	3.24	1.78	9.6	1640	186	214	174	5.7	aHG
5537	1043	101304.2	073433	2.91x0.17	9.07	11.61	1.32	38.6	3755	298	319	288	3.4	aHG _s
200872	1047	101437.3	322605	0.78x0.11	0.77	0.83	0.42	11.4	8655	308	476	285	7.0	aBC
200906	1048	101506.1	194244	0.68x0.09	1.51	1.61	0.87	7.0	10837	298	403	274	11.6	aHF
5567	1050	101613.2	345429	0.73x0.10	8.58	9.55	1.94	19.6	4512	252	330	241	12.2	aHG
200875	1054	101805.2	310115	0.77x0.10	0.71	0.76	0.68	6.6	7198	250	274	229	7.1	aHG
200907	1055	101815.7	355446	1.10x0.12	2.80	3.08	1.20	9.5	11300	408	482	382	12.4	aHG
5616	1058	102043.8	101127	1.27x0.11	1.60	1.79	0.73	9.9	9722	408	430	384	5.8	aHG _s
200970	1063	102155.7	120956	1.10x0.11	2.15	2.36	1.73	10.5	2431	152	178	140	10.3	aHG
5642	1064	102302.1	115948	2.02x0.22	5.77	6.71	2.85	10.5	2358	248	271	236	6.6	aHG
5653	1067	102344.8	202859	1.81x0.26	2.02	2.40	1.14	9.3	1170	293	336	281	7.5	aHG
200876	1073	102531.8	091609	0.69x0.07	1.11	1.18	0.97	6.7	10054	320	360	295	14.5	aHG
5687	1078	102638.3	062316	2.16x0.22	6.38	7.76	1.74	25.8	3563	265	298	255	3.5	aHG _s
5704	1082	102736.5	225913	1.32x0.10	2.29	2.61	1.17	7.7	14817	618	650	576	6.1	aHG
200877	1089	102852.8	051648	0.83x0.11	1.83	1.97	0.92	10.6	11520	345	369	321	5.7	aHG
5741	1100	103204.4	112713	2.86x0.34	3.84	5.13	0.97	14.6	1394	352	384	342	3.7	aHG _s
200873	1111	103600.0	292217	0.88x0.12	1.88	2.03	0.99	8.9	6315	272	307	255	6.7	aHG

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S_c	rms	snr	V_{\odot}	W_{50}	W_{20}	$W_{50,c}$	ϵ_W	Codes
5802	1115	103717.3	155115	1.23x0.11	3.21	3.50	1.25	9.8	6661	365	389	346	5.8	aHG
200878	A126	104018.1	134839	0.95x0.16	1.99	2.16	0.95	14.4	6543	201	222	188	3.1	aHG
5844	A127	104110.3	282437	1.66x0.28	2.07	2.39	1.99	9.8	1466	136	170	124	10.4	aHG
5951	1139	104812.4	362729	1.32x0.13	3.76	4.16	1.92	10.5	7133	304	331	286	5.7	aHG
5958	A135	104831.2	280657	1.99x0.34	1.99	2.29	1.98	8.9	1182	174	194	162	53.1	aHG
5965	1141	104841.0	141720	1.96x0.24	9.72	11.29	1.53	33.4	3075	256	278	247	2.6	aHGs
5994	1147	104957.3	101712	1.85x0.22	4.27	4.97	1.40	13.4	6387	348	368	331	3.1	aHGs
6004	1148	105022.8	102831	1.53x0.17	4.19	4.60	1.11	15.4	9398	452	486	429	3.8	aHG
6012	1150	105054.5	271032	1.48x0.16	2.30	2.53	0.82	11.9	6342	410	436	392	4.7	aHG
6026	1155	105149.8	173638	2.80x0.36	4.70	5.99	1.38	17.9	1101	215	234	206	2.2	aHG
6083	1179	105744.2	165733	1.57x0.18	4.05	4.57	1.80	17.0	948	170	193	161	4.5	aHG
6116	1187	110007.6	181542	4.76x0.54	14.52	22.36	0.89	75.8	1130	304	321	298	1.6	aHGs
211086	1198	110553.5	110532	0.72x0.10	1.11	1.19	0.96	7.1	11070	285	323	261	8.0	aHG
6216	A145	110809.4	050703	2.35x0.39	3.85	4.30	1.31	12.9	5796	435	457	417	5.6	aHG
210154	1205	110940.8	085354	1.18x0.10	2.15	2.38	1.45	11.1	3309	197	223	185	4.8	aHG
211087	1207	110952.5	321422	0.84x0.11	2.30	2.48	1.31	7.8	11163	380	405	353	7.8	aHG
6246	1209	111010.8	233144	1.51x0.17	5.44	6.20	1.72	13.8	6337	287	317	272	4.6	aHGs
211088	1210	111051.7	074206	0.73x0.09	1.07	1.15	0.86	7.8	7911	243	266	224	6.0	aHG
211089	A148	111057.6	094546	0.84x0.13	1.26	1.36	0.90	6.6	8785	416	452	389	9.8	aHG
211090	1213	111121.0	285404	0.76x0.10	1.40	1.50	1.02	4.6	8700	341	577	297	20.0	aBG
6306	A150	111453.0	045253	1.68x0.45	3.86	4.35	1.18	32.7	1755	93	131	86	1.9	aHG *
211137	1231	111755.3	063114	1.01x0.11	1.57	1.71	1.13	13.7	6192	236	260	222	5.5	aHG
6414	1239	112126.3	245317	1.74x0.15	2.85	3.35	1.12	12.0	7677	452	484	431	3.2	aHG
6428	A152	112212.0	381102	1.79x0.28	3.27	3.30	3.47	8.6	2017	160	177	143	16.5	gHG *
6442	1247	112338.3	080640	1.52x0.10	3.82	4.35	1.66	10.3	6308	353	377	335	6.6	aHGs
6475	1253	112555.2	092259	2.11x0.21	8.00	9.29	1.30	20.3	6313	422	481	406	3.6	aHGs
6483	1254	112625.9	173016	2.35x0.22	9.58	11.66	1.96	21.7	3894	332	356	320	2.7	aHGs
210391	A153	112755.3	093946	0.90x0.13	2.16	2.34	1.08	9.5	6138	268	304	251	5.8	aHG
6509	1265	112845.3	232327	2.37x0.12	8.19	9.73	1.63	30.2	2915	189	207	181	1.9	aHG
6519	1267	112936.4	012900	1.32x0.13	2.42	2.70	0.93	9.0	5801	420	444	396	6.4	aBGs
211092	1270	113050.6	101544	0.73x0.10	0.98	1.05	0.89	8.5	6311	224	247	207	7.6	aHG
6551	1274	113128.9	365730	1.51x0.16	3.76	4.24	1.41	13.6	6438	285	303	270	3.1	aHGs
6556	1276	113219.2	162327	1.75x0.21	3.11	3.54	1.27	13.8	5440	267	293	253	3.1	aHGs
6559	1279	113231.9	161427	1.79x0.11	5.56	6.46	1.45	22.4	5121	275	291	263	2.7	aHGs
6594	1285	113503.3	165000	3.19x0.39	11.11	14.64	2.20	36.5	1040	157	179	150	1.8	aHGs
210559	1287	113635.2	195146	1.01x0.12	2.53	2.76	0.67	22.2	6825	291	345	277	2.1	aHFs*
211093	1299	114047.5	110450	0.90x0.12	2.88	3.12	0.97	17.8	6104	208	260	196	5.4	aHG
6715	1300	114154.3	110406	1.57x0.22	4.53	5.22	1.36	10.9	6128	503	530	482	12.3	aHC *
210735	1302	114225.9	074636	1.12x0.11	2.64	2.90	1.28	13.8	5901	209	229	196	3.1	aHG
211216	1303	114332.9	130924	0.93x0.11	1.44	1.56	1.65	6.8	3290	149	200	134	8.7	aHG
211094	1304	114334.7	340040	1.01x0.11	1.80	1.96	1.32	4.2	9347	479	518	431	16.5	aBG
6804	1317	114737.8	071627	1.76x0.15	8.11	9.52	1.29	30.7	5996	305	332	292	2.6	aHGs
6808	1318	114742.7	353200	1.81x0.16	5.05	5.74	2.35	9.9	6363	316	339	298	8.5	aHGs
211029	1319	114822.1	212821	1.34x0.15	1.64	1.84	0.63	9.9	8070	401	432	379	3.0	aHCs*
6862	1322	115040.6	115433	1.37x0.15	3.22	3.66	1.96	10.9	2739	189	211	177	4.8	aHG
211138	1332	115308.0	251153	0.94x0.10	1.66	1.80	0.84	8.6	10152	371	399	347	7.7	aHG
211095	A161	115704.0	144422	0.69x0.11	0.50	0.53	0.77	5.6	6897	214	238	185	13.5	aBF
7031	1354	120047.5	294150	1.79x0.22	5.57	6.48	1.04	27.2	3573	247	267	237	3.5	aHGs

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S _c	rms	snr	V _⊙	W ₅₀	W ₂₀	W _{50,c}	ϵ _W	Co
7049	1356	120135.5	202747	1.31x0.12	1.12	1.22	0.92	5.5	7556	452	475	417	15.3	aH
7170	1379	120804.5	190613	3.25x0.28	14.37	19.66	1.18	77.2	2452	216	234	209	2.4	aH
7212	1383	121007.9	345813	1.39x0.10	4.52	5.05	2.91	9.3	6386	228	258	212	9.5	aH
7255	A167	121231.8	141824	2.80x0.50	8.65	10.98	1.69	24.0	2316	299	315	290	2.7	aH
7291	1396	121349.7	133512	3.25x0.45	14.83	20.66	1.37	59.4	230	224	244	219	1.3	aH
7327	1404	121505.6	170018	2.35x0.26	8.11	9.64	1.38	22.4	6692	369	401	354	2.7	aH
221520	1405	121556.1	125826	1.18x0.15	3.73	4.12	1.03	15.9	7595	384	407	366	3.0	aH
220328	1406	121605.4	065906	1.01x0.11	1.46	1.59	2.05	6.3	1995	145	164	127	7.4	aH
7387	1413	121742.9	042847	2.07x0.20	4.48	5.45	2.36	9.9	4969	265	281	250	7.5	aH
7394	1415	121754.0	014440	1.99x0.15	5.51	6.47	2.44	19.0	1598	182	205	173	4.5	aH
7403	1418	121830.0	040000	4.93x0.47	14.70	22.84	2.24	27.6	2541	359	383	349	3.4	aH
7459	1422	122043.5	291014	2.35x0.32	2.74	3.46	1.93	14.0	569	160	175	151	5.5	aH
7482	1427	122142.1	084848	3.14x0.39	0.62	0.81	0.60	6.2	1129	227	275	206	13.0	aB
221521	1428	122234.5	044503	1.03x0.12	4.04	4.41	1.14	13.7	7573	401	427	382	3.1	aH
7510	1429	122300.5	123212	2.35x0.34	2.44	2.98	2.73	8.0	-169	213	225	201	99.9	aH
7522	1433	122325.8	034230	3.02x0.32	5.74	7.65	1.54	15.9	1426	317	336	307	2.9	aH
7565	1437	122449.1	110836	1.99x0.19	9.14	10.86	2.08	31.2	924	157	177	150	2.6	aH
7607	1440	122619.4	043402	2.24x0.11	10.24	12.45	1.60	28.5	4240	312	330	301	2.6	aH
7724	1460	123148.6	274340	1.83x0.13	4.17	4.66	1.32	13.0	6855	354	392	333	5.2	aB
7772	1471	123352.6	261510	15.90x1.85	68.97	334.53	1.41	214.6	1282	403	536	396	1.6	aH
7787	1474	123420.0	274927	1.64x0.16	6.40	7.21	1.09	21.8	7340	387	433	370	2.2	aH
7802	1479	123548.0	081000	2.41x0.26	3.11	3.66	1.16	21.7	1788	161	186	153	4.4	aH
7806	1480	123603.3	014045	1.90x0.21	5.25	6.24	2.24	11.4	5199	301	314	286	6.5	aH
7808	1481	123606.0	104506	4.03x0.39	8.20	12.07	1.25	20.7	7280	509	544	489	2.2	aH
7948	1498	124438.4	091717	1.12x0.16	1.67	1.82	0.68	8.2	14118	530	672	493	5.2	aH
7955	1499	124443.8	265858	1.48x0.19	2.11	2.38	0.79	11.3	6756	379	423	360	7.5	aH
7991	1507	124806.8	014400	2.24x0.21	2.67	3.14	2.08	8.3	1272	183	207	170	5.8	aH
7999	1510	124843.2	290334	2.35x0.26	6.84	8.44	1.36	18.8	4754	457	480	442	2.8	aH
8195	1558	130359.0	295526	1.32x0.13	1.96	2.21	0.84	12.4	7040	255	276	240	3.9	aH
8203	1562	130503.2	330747	1.70x0.12	5.78	6.71	1.58	16.0	5299	297	322	280	7.6	aB
8220	1568	130606.8	245801	2.02x0.22	3.53	4.15	0.89	18.5	7127	539	558	518	3.6	aH
8324	1583	131233.2	031813	1.59x0.16	4.04	4.51	1.26	14.9	6517	324	343	308	3.0	aH
8429	1610	132158.6	172106	1.21x0.11	2.69	2.93	0.77	14.4	7246	308	344	292	4.6	aH
8457	1620	132506.0	210900	1.34x0.18	3.35	3.71	1.36	10.6	5965	396	443	377	6.6	oH
8456	1621	132507.3	152640	1.37x0.11	2.02	2.30	0.86	10.4	7119	383	407	363	4.9	aH
8580	1641	133318.0	334350	1.40x0.17	1.49	1.66	0.91	7.0	7464	393	416	370	6.1	aH
231022	1642	133332.4	082633	1.21x0.13	1.88	2.08	1.45	11.9	1243	120	146	110	6.5	aH
8590	1643	133353.5	372040	1.76x0.12	3.19	3.63	1.66	7.1	7572	389	489	366	25.2	aH
8608	1645	133443.5	320120	1.65x0.19	4.80	5.41	1.53	19.0	3004	200	216	190	2.8	aH
8662	1657	133903.2	340120	1.68x0.21	2.54	2.86	1.96	10.1	2034	173	190	161	6.6	aH
231023	1659	133953.8	040626	1.01x0.13	1.96	2.14	1.38	6.0	7026	356	402	328	9.5	aH
231024	1674	134737.7	160905	1.08x0.11	2.57	2.82	1.17	10.5	6755	289	348	272	6.6	aH
8796	1679	135038.4	051223	1.12x0.09	1.87	2.04	1.11	9.4	5073	224	243	209	4.9	aH
8862	1685	135417.5	202427	1.06x0.12	2.80	3.05	1.33	10.5	8251	324	358	301	7.1	aB
8879	1687	135521.2	260054	1.66x0.22	3.08	3.55	1.36	9.4	8593	470	506	445	5.8	oH
8895	1691	135610.6	024140	1.38x0.16	3.34	3.73	1.68	8.2	7215	349	424	328	7.7	aH
8924	1698	135813.4	021547	1.70x0.25	7.19	8.38	2.11	17.9	3597	247	267	236	2.9	aH
8979	1706	140133.6	064320	1.74x0.22	4.59	5.12	1.80	11.3	7437	373	402	354	11.3	oH

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S _c	rms	snr	V _☉	W ₅₀	W ₂₀	W _{50,c}	ϵ_W	Codes
8983	1705	140136.5	121434	1.34x0.12	3.44	3.78	0.83	16.1	7233	343	418	323	19.2	aBG
8996	1710	140218.5	143107	2.35x0.25	4.60	5.35	1.52	10.6	7185	415	444	394	3.4	oHG
9000	1711	140226.6	110227	1.10x0.13	2.55	2.80	0.70	14.9	11495	440	530	415	3.8	aHC *
9030	1714	140511.0	095433	1.12x0.13	0.98	1.08	0.53	8.0	7070	400	444	374	5.9	aBG
9091	1725	141003.0	300820	1.11x0.13	2.49	2.71	1.09	17.8	4362	204	222	193	4.5	aHG
9138	1737	141428.1	231357	1.99x0.22	5.17	6.15	1.13	20.7	4601	314	332	302	2.8	oHG _s
9224	1748	142147.5	345653	1.16x0.11	1.72	1.87	1.40	6.9	8500	329	351	307	4.4	aHG
9345	1762	142915.2	062243	1.40x0.19	3.40	3.77	0.81	24.5	2340	205	258	196	24.1	aHC *
9414	1776	143500.5	182800	1.99x0.17	5.34	6.14	0.88	27.2	5832	325	346	312	2.6	aHG _s
241180	1792	143822.6	143430	0.96x0.10	2.32	2.52	0.84	10.5	9104	413	507	390	3.4	aHG
9468	1795	143848.0	101607	1.03x0.11	1.87	2.04	0.70	8.6	16679	527	645	487	11.5	aHF
9475	1796	143938.3	121653	1.49x0.16	2.50	2.75	1.61	7.8	8620	350	367	327	15.4	aHG
9490	1801	144114.2	112053	1.57x0.16	5.26	5.93	2.01	8.4	10940	445	478	417	6.8	aHG
9546	1816	144725.6	234600	1.46x0.10	2.25	2.45	1.18	11.7	5280	200	228	187	5.6	aHG
9606	1828	145339.8	245520	1.62x0.18	3.48	3.89	1.44	11.5	4844	362	382	346	3.3	aHG
241183	1832	145440.0	094444	0.87x0.09	1.65	1.78	0.85	9.2	9926	302	330	281	3.6	aHG *
241184	1836	145505.2	072442	0.94x0.11	0.64	0.69	0.74	4.9	10847	446	465	399	12.2	aBM
9646	1841	145732.5	273107	1.10x0.11	2.07	2.27	0.65	14.0	9632	283	323	262	5.2	aBG
250015	1846	150056.4	214420	1.15x0.12	7.05	7.77	1.52	16.1	11989	427	510	399	8.6	aBG *
9677	A217	150128.1	225340	1.46x0.27	3.99	4.50	1.01	11.5	11554	677	710	642	3.3	aHG
9760	1863	150930.3	015311	3.25x0.22	10.94	14.56	2.35	35.5	2023	144	166	137	2.5	aHG _s
9793	1873	151331.5	183347	1.37x0.18	1.88	2.08	0.76	9.0	11427	678	697	641	3.7	aHG
9828	1890	152015.3	192613	1.79x0.15	4.10	4.76	1.11	16.2	6875	447	468	428	3.0	aHG _s
9830	1891	152031.2	044220	1.90x0.22	3.24	3.69	2.42	9.6	1830	167	189	155	7.5	aHG
9841	1897	152317.1	182716	2.82x0.36	6.52	8.38	2.16	12.5	4392	417	440	401	6.5	oHG
9845	1898	152339.2	092306	1.50x0.20	7.00	8.05	1.67	30.6	1895	176	195	168	2.6	aHG
251586	1913	153144.6	114931	0.95x0.10	1.58	1.72	0.91	7.8	13019	361	400	333	6.0	aHG
9920	1920	153315.3	305800	1.70x0.22	2.60	2.93	0.88	11.9	9430	495	519	470	4.0	oHG
9919	1921	153317.5	124550	1.58x0.21	4.59	5.28	1.25	21.7	3183	260	283	250	2.7	aHG _s
9949	1928	153653.0	142007	1.15x0.11	2.46	2.68	1.01	13.0	5799	236	261	219	5.2	aBG
9977	1935	153926.5	005219	4.26x0.40	15.19	20.11	5.89	16.4	1915	256	270	249	4.2	nHG _s
9994	1942	154150.0	332754	1.22x0.13	2.62	2.88	0.94	11.0	9505	389	432	363	6.2	aBG
9996	1943	154206.2	114222	1.70x0.19	1.68	1.95	0.67	7.0	10294	743	770	705	4.1	aHG
10000	1945	154218.8	040654	1.97x0.20	6.36	7.04	1.34	28.5	3541	215	228	206	2.0	aHG
10025	1948	154353.0	030000	1.15x0.12	2.87	3.13	1.67	16.3	1522	118	136	109	2.9	aHG
10027	1949	154404.5	043506	1.22x0.11	1.81	1.97	0.88	20.1	3289	162	191	153	99.9	aHF *
10043	1953	154630.0	220113	2.69x0.35	17.61	22.29	1.48	47.3	2161	326	346	318	1.8	oHG
10044	1954	154642.0	181520	1.29x0.11	2.96	3.31	1.53	13.8	3313	199	217	188	3.8	aHG
251587	1965	155153.1	110708	0.64x0.09	1.21	1.29	0.95	6.8	10843	256	375	234	6.9	aHF *
251572	1967	155213.6	043941	1.10x0.11	1.46	1.60	0.61	7.9	10360	433	464	406	3.9	aHG
251333	1968	155240.0	110500	0.88x0.11	2.75	2.97	0.70	14.0	12015	294	614	273	55.1	aHC *
10094	1970	155338.0	243810	1.12x0.11	1.96	2.14	1.17	9.4	9755	478	498	447	8.1	aBG _s
10111	1971	155553.4	131841	2.07x0.19	3.26	3.83	1.29	9.3	10387	482	507	454	3.6	aHG
10131	1975	155854.5	141317	1.25x0.11	1.04	1.14	0.98	5.4	11721	443	469	400	10.5	aHG _s
10176	1984	160243.5	135013	1.76x0.17	2.40	2.73	1.29	8.2	4636	324	338	307	6.8	aHG
261057	1986	160333.2	223515	1.23x0.11	4.91	5.45	1.84	16.2	5694	229	249	216	4.5	aHG
10219	1989	160553.0	073953	3.34x0.45	11.28	15.14	1.92	30.0	1369	209	228	202	2.6	aHG _s
10227	1992	160708.0	364413	2.18x0.21	4.48	5.52	1.29	14.7	9032	611	649	581	6.8	aBG

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S _c	rms	snr	V _☉	W ₅₀	W ₂₀	W _{50,c}	ϵ_W	Code
10232	1995	160740.0	201830	1.79x0.17	3.17	3.61	1.22	16.0	3318	233	259	222	2.9	aHG
10233	1996	160742.7	224433	1.71x0.18	7.26	8.11	3.50	7.7	9820	457	482	429	15.4	oHGs
10236	1998	160755.9	224647	1.65x0.21	3.34	3.73	1.79	8.0	9948	543	576	508	29.4	oBGs
10274	2001	161042.1	382304	1.47x0.16	3.84	3.87	3.82	5.5	3883	216	248	181	17.1	gHG
10276	2003	161054.3	320713	1.51x0.20	5.55	6.26	1.78	13.9	9275	396	420	375	3.8	aHG
260921	2008	161305.5	313512	0.87x0.11	0.57	0.61	1.23	3.3	9255	267	307	228	24.6	aBM
261058	2010	161339.6	165434	0.97x0.11	1.37	1.49	0.93	7.3	10378	388	421	362	4.6	aHG
261059	2011	161341.5	113610	0.75x0.09	0.65	0.70	0.55	6.9	10604	424	448	390	7.8	aBG
261060	2013	161422.3	144619	1.18x0.11	1.91	2.11	0.98	12.2	9107	277	307	259	3.9	aHG
261061	2014	161458.0	200654	1.23x0.11	1.82	2.02	0.99	8.5	10876	363	385	338	4.4	aHG
10327	2018	161620.6	221707	1.23x0.17	4.76	5.19	1.98	11.7	4272	262	285	248	4.0	oHG
261008	2020	161644.3	155311	1.00x0.10	2.69	2.93	0.91	10.3	10350	389	427	365	3.5	aHG
10375	2031	162221.3	094253	1.23x0.15	0.73	0.82	0.37	8.4	10320	481	514	448	5.3	aBG
260615	2040	162723.1	115726	1.10x0.16	1.91	2.10	1.00	11.1	5142	218	243	204	4.0	aHG
10453	2046	163245.0	204053	1.62x0.17	8.17	9.30	1.71	22.4	4352	275	293	264	2.1	aHG
10498	2054	163723.0	292753	1.01x0.11	1.74	1.90	1.20	6.1	12393	376	401	342	6.5	aHG
260739	2057	163912.7	093154	0.97x0.12	3.83	4.17	1.42	15.5	5591	227	254	214	3.7	aHG
261062	2058	164013.0	200626	0.85x0.09	1.08	1.17	0.75	8.0	10191	345	397	321	10.5	aHG
261063	2068	164500.0	315819	1.12x0.11	2.80	3.08	1.66	12.6	4433	196	210	184	5.6	aHG
261009	A244	164512.7	085029	0.99x0.18	2.86	3.12	1.00	10.6	9767	408	437	384	3.4	aHG
10569	2072	164737.0	093113	1.93x0.24	5.42	6.30	1.70	11.1	9691	590	618	561	4.0	aHG
10603	2084	165250.8	221353	1.34x0.17	3.28	3.64	1.70	9.0	10649	458	471	430	9.5	oHG
10625	2091	165542.0	384502	1.70x0.22	5.10	5.14	4.78	8.9	2056	126	179	110	9.8	gHS
270321	2109	170442.7	085934	1.46x0.11	1.35	1.53	0.89	7.0	10624	525	546	493	7.0	aHG
10714	2110	170531.0	301626	1.68x0.19	5.70	6.63	1.06	23.4	9526	479	557	454	4.8	aBG
10716	2111	170550.4	302340	1.40x0.15	3.63	4.05	1.34	8.5	9691	407	439	378	7.4	aBGs
10738	2113	170838.7	055440	1.97x0.24	4.80	5.72	1.07	14.2	6716	593	624	571	4.6	aHGs
270322	2120	171245.0	070257	1.03x0.13	1.90	2.08	0.92	10.6	6321	247	265	231	5.7	aHG
10852	2131	172356.0	112133	1.33x0.13	2.83	3.11	1.17	18.8	2781	148	178	139	2.2	aHG
270323	2135	172506.6	134217	0.88x0.08	1.71	1.85	0.97	9.8	9059	240	272	222	4.2	aHG
270324	2138	172636.5	085222	1.16x0.15	2.74	3.02	1.07	10.6	8762	385	407	363	4.9	aHG
10874	2140	172700.3	292053	1.47x0.16	7.50	8.37	1.01	36.9	6800	253	284	241	1.9	aHGs
10890	2145	172948.2	321600	1.88x0.10	4.91	5.83	1.60	17.0	4549	259	283	247	4.5	aHG
270325	2156	174522.9	054922	1.23x0.12	4.86	5.39	1.11	13.7	6447	529	551	509	3.1	aHG
11003	2164	174821.1	145013	1.29x0.17	7.10	7.81	1.56	20.0	4064	289	339	277	4.4	aHG
11021	2167	175042.2	290351	1.46x0.19	4.57	5.06	2.14	10.0	5186	392	406	374	4.9	aHG
11059	2171	175511.2	114420	1.34x0.19	3.12	3.40	1.46	14.5	2907	155	194	145	5.5	aHG
11093	2176	175930.0	065800	5.38x0.68	62.97	63.67	10.74	29.9	1964	313	329	308	1.3	bHG
11108	2181	180252.3	200210	1.14x0.10	1.88	2.06	1.19	9.5	6788	296	320	278	5.8	aHG
280104	2185	180551.1	163408	0.99x0.10	3.83	4.17	1.08	14.6	6548	349	386	333	5.5	aHG
11132	A253	180748.0	384603	2.49x0.38	8.60	8.77	4.36	11.0	2839	328	348	311	6.9	gHG
280138	2187	180928.1	245924	0.92x0.10	39.10	42.38	1.15	11.1	4577	183	197	170	18.2	aHG
11142	2188	180936.9	253847	1.81x0.24	5.87	6.82	2.82	9.4	4510	362	386	345	4.2	aHGs
280139	2189	180958.6	253352	0.81x0.11	1.85	1.99	1.03	9.4	4758	282	323	266	10.4	aHG
11188	2196	181520.0	185250	1.28x0.16	3.66	4.02	1.41	11.4	5285	308	344	292	4.8	aHG
280105	2203	182414.1	251812	0.90x0.12	2.31	2.50	1.02	13.3	5297	183	214	170	2.6	aHG
11254	2206	182746.7	302413	1.74x0.16	5.81	6.49	1.35	24.9	4987	246	256	235	2.0	aHGs
11275	2211	183147.5	320600	1.95x0.11	4.72	5.48	1.72	12.0	5456	403	423	386	3.9	aHGs

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S_c	rms	snr	V_{\odot}	W_{50}	W_{20}	$W_{50,c}$	ϵ_W	Codes
11301	2217	183542.2	172922	2.63x0.19	10.70	13.52	2.25	17.0	4500	494	517	478	4.5	aHG
11328	2221	183907.2	375717	1.34x0.15	3.34	3.37	2.90	5.5	5654	301	344	280	12.7	eBGs
11584	2273	202916.8	012217	2.13x0.26	6.53	7.67	1.97	13.2	5352	449	470	432	3.8	aHG
11595	2278	203232.6	014550	2.07x0.22	8.56	10.43	1.82	20.3	4014	343	362	331	2.8	aHG
11647	2291	205154.9	173513	1.77x0.16	6.47	7.36	1.17	16.8	8002	479	515	458	3.7	aHG
300180	2292	205236.3	172802	0.90x0.08	3.17	3.43	1.03	20.5	5563	185	204	174	2.8	aHG
11696	A261	210929.5	111010	1.03x0.20	0.88	0.96	0.83	6.1	5299	217	301	193	10.4	aBG
11711	2314	211324.9	170853	1.05x0.10	2.25	2.47	0.72	13.7	8973	421	438	399	3.1	aHG
11719	2316	211631.0	152807	1.40x0.18	2.40	2.73	1.25	9.5	8547	488	509	463	4.2	oHG
310299	2323	212123.5	185448	0.80x0.10	1.49	1.60	1.43	7.0	5377	221	244	204	7.8	aHG
11758	2327	212834.1	134557	1.74x0.24	3.02	3.47	1.20	7.3	8614	627	646	596	6.1	oHG
310300	2328	212841.6	030335	0.76x0.08	2.69	2.89	2.13	11.0	4137	134	154	122	4.8	aHG
310301	2329	213207.0	142729	0.84x0.10	1.04	1.12	1.15	4.3	8697	348	365	304	12.5	aHG
11768	2330	213213.9	184340	1.31x0.16	1.45	1.59	0.63	10.0	6608	443	458	422	4.9	aHG
11771	A263	213310.8	231440	1.79x0.31	4.33	4.94	2.48	14.8	1661	127	153	117	3.7	oHG
310302	A265	214118.5	095346	0.57x0.10	0.95	1.01	0.94	5.1	10734	300	312	260	8.6	aHG
310303	A266	214209.7	064344	0.76x0.12	1.04	1.12	0.87	5.2	10483	446	472	403	19.4	aHG
11832	2345	214917.5	112016	1.43x0.11	4.17	4.62	1.29	14.6	8548	363	383	344	3.8	oHG
310304	2349	215013.5	031831	0.99x0.10	1.83	1.99	0.98	9.0	8260	301	349	281	6.7	aHG
11838	2350	215020.5	280413	2.08x0.17	5.79	7.05	2.18	15.2	3476	252	273	240	3.7	oHG
310305	2356	215701.5	061903	0.91x0.11	1.61	1.74	0.89	8.7	11702	304	342	280	7.7	aHG
310306	2357	215857.5	031918	0.80x0.08	0.82	0.88	1.06	5.7	8163	165	210	137	15.3	aBF
11893	2360	220157.2	354147	2.26x0.27	6.87	8.59	2.29	7.2	5563	601	628	576	11.5	oHG
320025	2364	220400.5	171130	0.84x0.11	1.46	1.57	1.00	7.5	10285	286	313	263	6.1	aHG
320523	2367	220534.8	152814	1.06x0.10	1.21	1.32	1.37	7.3	7827	177	231	159	9.6	aHG
320524	2370	220838.5	223131	0.94x0.11	1.95	2.12	0.89	12.6	7209	257	275	241	3.9	aHG
320525	2371	220914.8	152809	0.78x0.10	1.63	1.75	0.91	9.3	7809	279	299	260	5.0	aHG
320534	2373	221008.0	053741	0.84x0.11	2.27	2.45	1.33	12.3	4451	180	204	168	5.6	aHG
11952	2375	221112.5	135816	2.24x0.28	3.31	3.85	1.31	15.0	7632	346	367	328	3.8	oHG
320526	2376	221223.3	141323	0.80x0.09	0.95	1.02	0.99	6.7	10475	292	310	268	7.0	aHG
11964	2379	221305.5	185807	2.13x0.30	4.93	5.53	1.73	24.9	1421	152	196	144	2.0	oHG
11967	2380	221321.2	332256	1.39x0.19	5.16	5.72	1.88	13.9	5028	270	324	253	3.8	oBG
320527	2381	221327.1	134952	0.76x0.10	1.71	1.84	0.86	9.4	7605	331	366	311	7.6	aHG
320535	2388	222122.1	063810	0.77x0.10	1.11	1.19	0.80	12.3	4764	135	169	123	3.9	aHS
320521	2390	222309.0	184420	0.92x0.11	2.03	2.20	0.92	8.8	9289	306	362	285	8.6	aHG
320536	A268	222336.5	053116	0.66x0.13	0.96	1.03	0.84	8.3	8002	164	200	147	11.4	aHF
320537	A269	222430.3	053513	0.71x0.11	1.79	1.92	1.17	13.8	4753	156	190	144	7.4	aHF
320538	A271	223226.5	081917	0.68x0.10	1.12	1.20	0.94	8.4	7581	186	243	169	8.6	aHG
320528	2395	223306.0	190228	0.66x0.09	1.22	1.30	1.17	6.7	11398	219	243	197	9.7	aHG
320539	2396	223306.0	030057	0.71x0.10	0.93	1.00	0.59	9.8	9335	274	297	255	4.9	aHG
12104	2398	223402.8	020810	1.68x0.20	4.73	5.24	1.32	11.2	11525	509	536	480	3.4	aHG
320522	2399	223424.5	183607	0.78x0.10	2.44	2.62	1.26	10.3	8424	288	302	269	4.1	aHG
12112	2400	223446.0	114133	1.23x0.11	2.30	2.51	0.90	9.7	15366	515	542	478	3.6	aHG
12123	2401	223530.0	245547	1.16x0.13	3.54	3.89	1.28	17.3	4082	191	243	180	2.9	aHG
12133	2404	223701.6	082103	1.88x0.21	4.33	5.09	1.08	15.5	7423	455	479	435	3.0	aHG
320540	2406	223719.3	331907	1.01x0.10	1.15	1.25	1.72	4.6	6570	215	256	177	13.2	aHG
320529	2407	223749.2	184555	0.78x0.11	2.94	3.16	1.19	11.5	9797	406	424	383	4.0	aHG
320530	2408	223836.0	190432	0.96x0.08	1.54	1.67	0.82	9.0	8620	375	396	353	6.7	aHG

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S _c	rms	snr	V _☉	W ₅₀	W ₂₀	W _{50,c}	ϵ_W	Codes
12165	2411	224030.8	324350	1.40x0.18	2.05	2.25	1.37	6.5	6531	329	398	306	9.9	oHGs
320541	2412	224044.3	081016	1.01x0.10	1.31	1.43	0.76	9.0	9809	258	287	238	5.9	aHG
320542	2413	224121.5	081018	0.63x0.09	2.21	2.36	1.05	10.2	7967	252	276	235	4.9	aHG
320543	2425	224808.0	115821	0.64x0.09	1.52	1.62	0.89	9.2	11298	309	336	286	5.9	aHG
12249	2431	225257.5	280450	1.15x0.10	2.61	2.85	1.23	10.0	7551	312	358	293	4.9	aHGs
12252	2432	225320.3	313013	1.40x0.18	2.43	2.79	1.55	8.9	7112	304	325	285	5.0	oHGs
12253	2433	225333.1	123001	1.83x0.16	1.55	1.80	0.92	7.6	7771	344	390	317	9.3	oBG [*]
12264	2435	225509.7	123850	1.32x0.09	2.57	2.80	1.23	9.9	7974	317	339	298	4.2	oHGs
320544	2437	225602.0	104259	0.88x0.09	2.20	2.38	0.91	9.1	7293	349	378	329	6.7	aHG
320545	A275	225609.2	081936	0.82x0.13	1.31	1.41	1.22	7.8	6764	215	234	197	6.0	aHG
320532	2438	225613.5	184804	1.05x0.11	1.00	1.09	0.80	5.5	9937	387	403	350	10.3	aHG
320520	2439	225622.7	054244	0.99x0.11	2.05	2.23	1.22	7.4	12421	476	500	444	9.7	aHG
12281	2441	225642.8	132014	3.44x0.20	14.58	21.36	1.84	55.3	2562	264	289	256	1.7	aHG
320546	2442	225647.8	260710	0.68x0.09	0.90	0.96	1.07	6.0	7637	185	207	160	8.7	aHG
12290	2443	225712.0	243433	1.84x0.22	2.91	3.31	1.11	8.9	7285	456	475	433	3.7	oHG
320547	2444	225735.1	144458	0.88x0.10	2.23	2.41	1.26	10.0	7307	258	313	241	10.4	aHG
12304	2446	225835.4	052307	1.68x0.22	2.27	2.56	0.80	12.0	3470	268	319	255	6.5	aHGs
12320	2447	225940.7	302943	1.19x0.12	2.72	2.99	0.95	11.7	6624	328	356	311	4.8	oHGs
320548	2449	225957.2	112209	0.93x0.09	2.00	2.17	0.84	10.8	9177	336	352	315	5.7	aHG
12327	2452	230026.9	254444	1.71x0.11	3.50	3.98	1.78	8.8	13663	400	445	370	6.8	oHG
331156	2456	230246.1	245650	0.66x0.06	1.29	1.38	0.80	10.0	9798	218	251	200	5.8	aHG
331157	2458	230403.5	055048	1.21x0.10	3.38	3.74	1.03	18.1	5928	233	248	220	2.9	aHG
12367	A277	230432.6	165217	1.23x0.19	2.38	2.60	1.14	14.2	7779	288	321	271	5.5	oHGs
12410	2465	230925.3	304456	1.84x0.17	2.64	3.10	0.76	14.5	7086	439	466	416	3.4	oBGs
12426	2470	231100.2	061744	1.68x0.17	4.23	4.73	1.30	18.5	4720	242	267	230	3.6	aHGs
12430	2471	231117.6	284413	2.49x0.27	13.23	16.93	1.37	52.6	3683	221	265	210	5.4	oBGs
12432	2473	231130.5	243716	1.12x0.15	1.74	1.90	1.22	7.0	8383	335	384	312	5.4	oHG
331184	2475	231146.0	340136	1.03x0.11	0.99	1.08	1.56	6.5	5211	192	211	173	7.2	aHG
12452	2476	231229.0	010933	2.11x0.19	10.66	12.81	1.69	28.3	4961	305	324	293	3.4	aHGs
12458	2477	231243.0	304033	1.08x0.13	1.47	1.60	0.66	10.7	6856	416	430	396	4.0	aHGs
12475	2479	231430.0	032600	1.66x0.26	6.57	7.56	4.32	12.8	3133	227	244	215	5.6	oHG
12489	2484	231614.4	223553	1.59x0.16	4.05	4.52	0.82	15.1	10887	524	553	497	2.6	oHG
12506	2486	231658.8	154813	3.25x0.28	11.36	15.12	1.32	30.0	7238	465	493	447	2.6	aHGs
12533	2489	231824.0	233200	1.40x0.19	2.26	2.57	1.02	8.8	6008	477	500	456	4.3	oHG
331164	2495	232123.5	093226	1.03x0.10	1.35	1.47	0.91	7.6	8272	379	409	356	7.8	aHG
12577	2496	232132.1	202440	1.40x0.17	2.48	2.77	1.15	9.0	11766	566	587	533	4.3	aHG
12583	2497	232204.9	234237	1.42x0.19	2.92	3.27	1.61	9.1	5061	265	301	249	5.8	oHGs
331168	2500	232329.6	224322	1.10x0.16	1.46	1.60	0.83	9.4	10959	295	311	273	5.8	aHG
12642	2505	232847.0	085600	1.36x0.12	6.43	7.12	1.87	18.2	8903	382	408	363	7.3	oHG
12650	2507	232935.0	320858	1.57x0.22	3.31	3.73	1.31	11.2	5076	306	332	290	4.8	oHGs
12660	2512	233039.8	205744	2.02x0.24	11.19	13.16	1.35	35.6	5789	340	364	327	2.6	oHGs
12680	2517	233221.7	170120	1.37x0.17	2.24	2.50	0.80	11.8	6715	402	449	383	3.3	oHGs
12693	2518	233314.4	320633	2.37x0.18	9.02	10.97	2.43	24.3	4957	225	248	211	3.9	oBGs
12714	2520	233543.4	320333	2.13x0.28	7.92	8.85	1.83	20.0	4800	300	325	288	4.5	aHGs
12731	2524	233806.9	200940	1.57x0.21	3.98	4.53	1.10	12.0	6758	517	545	496	3.3	oHG
331095	2526	234000.1	274645	0.95x0.13	2.04	2.22	1.29	10.9	7169	250	271	234	4.0	aHGs
331185	2532	234141.7	275946	0.85x0.10	1.90	2.05	1.33	9.2	7143	223	243	206	5.8	aHG
331173	2533	234206.3	045834	0.90x0.10	1.19	1.29	1.05	6.9	5582	217	231	201	7.7	aHG

TABLE 1—*Continued*

A/UGC	FCG	$\alpha(1950)$	$\delta(1950)$	a x b	S	S_c	rms	snr	V_{\odot}	W_{50}	W_{20}	$W_{50,c}$	ϵ_W	Codes
331174	2537	234606.5	104438	0.94x0.10	1.65	1.79	1.27	8.1	8603	211	244	193	8.6	aHG
331175	2539	234629.8	084739	1.04x0.12	3.01	3.29	1.24	14.5	6363	257	281	243	3.8	aHG *
12802	2543	234805.5	141213	1.25x0.09	2.36	2.59	1.60	8.0	8011	326	365	305	24.2	oHG
12807	2544	234827.3	353010	0.92x0.09	2.67	2.91	1.99	6.6	12341	393	417	362	7.2	aHG
331176	2548	234947.6	074154	1.01x0.09	1.81	1.97	1.46	10.3	3865	155	171	142	4.0	aHG
12828	2551	235043.0	190645	1.27x0.16	2.69	2.98	1.34	12.0	4349	214	233	201	3.2	aHG
331177	2558	235246.0	033238	1.01x0.10	2.20	2.40	1.47	9.6	5378	193	209	178	6.6	aHG
12882	2562	235646.4	310034	1.33x0.17	3.48	3.79	1.71	14.2	5000	231	255	218	4.6	aHG _s
12900	2565	235823.4	200400	2.02x0.17	8.61	10.35	1.48	21.9	6804	436	465	419	3.6	aHG _s
12913	2567	235903.1	031330	1.34x0.17	4.30	4.85	3.87	7.2	6339	257	269	238	5.3	oHG _s
12920	2573	235948.8	265557	1.68x0.19	2.98	3.33	1.39	11.4	7610	295	325	277	7.5	oHG _s

<i>Source</i> <i>FGC</i>	<i>R. A.</i> <i>(1950)</i>	<i>Dec.</i> <i>(1950)</i>	<i>a</i> <i>(blue)</i>	<i>b</i> <i>(blue)</i>	<i>UGC</i>	<i>Velocity Coverage (1000 km s⁻¹)</i>							
						0	2	4	6	8	10	12	14
1983	16 02 33.8	8 35 18	0.72	0.10									
1993	16 07 20.4	22 27 55	0.80	0.09									
A241	16 11 01.1	23 04 46	1.12	0.17									
2006	16 12 41.7	27 59 08	0.98	0.12									
2016	16 15 45.2	26 38 13	0.89	0.09									
2050	16 34 07.2	4 32 43	0.96	0.11									
2087	16 54 31.0	27 49 58	0.75	0.09									
2093	16 56 18.3	15 17 43	0.91	0.12									
2119	17 12 27.9	34 36 35	0.77	0.09									
2130	17 21 07.2	16 24 17	0.84	0.10									
2136	17 25 20.3	25 31 46	0.84	0.11									
2141	17 27 10.6	5 03 39	0.80	0.10									
A250	17 36 05.2	9 29 15	0.67	0.11									
A252	17 53 47.2	24 49 41	0.68	0.10									
2191	18 10 39.1	23 42 43	0.76	0.10									
2192	18 11 40.5	20 51 55	0.85	0.11									
2215	18 33 55.2	20 09 32	0.65	0.09									
2309	21 05 04.7	17 40 06	0.80	0.09									
A262	21 15 06.9	14 02 58	0.72	0.12									
2325	21 22 01.9	7 36 09	0.89	0.10									
2353	21 55 22.5	8 01 38	1.17	0.11									
2369	22 07 21.6	7 11 01	0.81	0.10									
2387	22 19 50.4	5 16 16	0.78	0.09									
A267	22 23 23.5	6 45 25	0.87	0.13									
A270	22 25 04.9	22 38 52	0.67	0.10									
2393	22 26 57.4	29 07 32	0.91	0.12									
2427	22 50 06.7	4 28 55	0.70	0.10									
2434	22 54 11.3	1 35 30	1.04	0.11									
A274	22 54 38.0	25 27 35	1.34	0.20									
2474	23 11 38.9	5 00 15	0.89	0.11									
2480	23 15 11.7	7 12 40	0.78	0.11									
2482	23 15 20.3	28 24 03	0.76	0.10									
2483	23 15 27.0	22 28 43	1.33	0.12									
2493	23 20 45.8	7 03 18	0.84	0.11									
2511	23 30 18.9	22 39 31	0.96	0.11									
2534	23 42 37.7	22 23 32	0.99	0.13									
2536	23 45 25.3	27 51 05	1.47	0.09									
2547	23 49 14.4	5 43 16	0.65	0.07									
2550	23 50 41.0	10 37 00	1.01	0.11	UGC 12825								
2555	23 52 19.6	27 37 51	1.23	0.13									
2559	23 53 14.2	17 52 31	0.89	0.10									

<i>Source</i> <i>FGC</i>	<i>R. A.</i> <i>(1950)</i>	<i>Dec.</i> <i>(1950)</i>	<i>a</i> <i>(blue)</i>	<i>b</i> <i>(blue)</i>	<i>UGC</i>	<i>Velocity Coverage (1000 km s⁻¹)</i>							<i>14</i>
						<i>0</i>	<i>2</i>	<i>4</i>	<i>6</i>	<i>8</i>	<i>10</i>	<i>12</i>	
815	8 53 01.3	20 34 08	0.97	0.10	UGC 4856				████████████████████				
835	9 03 04.4	13 11 20	0.93	0.10		████████████████████						████████████████████	
846	9 06 21.6	10 21 25	0.78	0.11		████████████████████						████████████████████	
857	9 10 32.3	30 12 34	1.73	0.22					████████████████████				
860	9 11 26.5	31 32 10	0.78	0.08		████████████████████						████████████████████	
883	9 20 15.2	22 54 29	1.04	0.11		████████████████████						████████████████████	
894	9 24 54.4	36 45 32	0.78	0.09	UGC 5174				████████████████████				
907	9 30 09.9	36 19 46	0.89	0.12				████████████████████	████████████████████	████████████████████	████████████████████		
920	9 37 18.0	35 06 16	0.78	0.07					████████████████████				
928	9 38 52.7	33 44 08	1.09	0.12				████████████████████	████████████████████	████████████████████	████████████████████		
932	9 41 01.6	14 54 35	0.95	0.10		████████████████████						████████████████████	
948	9 45 29.0	25 33 42	1.00	0.09		████████████████████						████████████████████	
970	9 51 54.0	25 28 53	0.85	0.09	UGC 5712	████████████████████						████████████████████	
1024	10 07 18.8	27 49 13	0.95	0.10		████████████████████						████████████████████	
A123	10 21 21.8	12 09 37	0.76	0.11		████████████████████						████████████████████	
1088	10 28 41.2	32 36 55	1.25	0.15					████████████████████				
1094	10 30 20.7	33 32 03	1.10	0.11				████████████████████	████████████████████	████████████████████	████████████████████		
1103	10 33 29.5	22 20 12	1.19	0.10		████████████████████						████████████████████	
1114	10 36 45.4	35 10 54	0.81	0.11	UGC 5755				████████████████████				
A128	10 42 13.5	21 56 06	0.78	0.12		████████████████████						████████████████████	
1137	10 46 06.7	31 37 57	0.95	0.11		████████████████████						████████████████████	
1149	10 50 24.4	25 55 34	1.08	0.11		████████████████████						████████████████████	
A137	10 52 14.7	11 24 06	0.97	0.10		████████████████████						████████████████████	
1160	10 53 26.6	10 00 21	0.87	0.12		████████████████████						████████████████████	
1164	10 54 21.1	10 05 12	0.78	0.11	UGC 7108	████████████████████						████████████████████	
A138	10 54 11.6	33 36 23	0.80	0.12		████████████████████						████████████████████	
A141	10 58 26.1	31 26 55	0.93	0.14					████████████████████				
1192	11 02 00.1	35 09 51	1.06	0.12				████████████████████	████████████████████	████████████████████	████████████████████		
1242	11 21 47.6	12 41 30	0.84	0.10		████████████████████						████████████████████	
1238	11 21 11.6	28 04 59	0.78	0.10		████████████████████						████████████████████	
1358	12 02 16.1	32 32 18	1.12	0.14	UGC 8344	████████████████████						████████████████████	
1369	12 04 44.6	20 51 47	1.29	0.15		████████████████████						████████████████████	
A165	12 12 11.5	35 49 37	1.00	0.15					████████████████████				
A171	12 25 25.1	28 54 30	0.86	0.11		████████████████████						████████████████████	
A176	12 46 17.5	9 16 57	0.72	0.11					████████████████████				
1521	12 52 33.3	30 58 48	0.80	0.11		████████████████████						████████████████████	
1561	13 04 55.4	5 01 54	1.05	0.12	UGC 9417	████████████████████						████████████████████	
1574	13 09 28.5	11 21 54	0.91	0.11		████████████████████						████████████████████	
1589	13 14 27.4	8 06 28	1.19	0.17					████████████████████				
1599	13 17 41.5	11 46 01	0.97	0.10				████████████████████	████████████████████	████████████████████	████████████████████		
1602	13 18 47.5	26 50 48	0.83	0.09		████████████████████						████████████████████	
1670	13 45 56.4	26 09 44	0.78	0.11		████████████████████						████████████████████	
1690	13 55 52.4	29 06 03	1.45	0.18	UGC 9680	████████████████████						████████████████████	
1730	14 11 34.5	26 42 50	1.09	0.11		████████████████████						████████████████████	
A203	14 17 32.2	12 11 41	0.89	0.13		████████████████████						████████████████████	
1778	14 35 12.1	22 11 13	1.34	0.17		████████████████████						████████████████████	
1780	14 35 23.4	32 58 32	1.06	0.10		████████████████████						████████████████████	
1787	14 37 13.7	9 43 23	0.88	0.12		████████████████████						████████████████████	
1814	14 47 03.5	29 57 00	1.67	0.17	UGC 9680	████████████████████						████████████████████	
A216	15 00 08.1	8 05 18	1.00	0.15		████████████████████						████████████████████	
1844	15 00 05.9	25 44 12	0.99	0.09		████████████████████						████████████████████	
1848	15 01 44.6	18 50 36	1.32	0.15		████████████████████						████████████████████	
1864	15 10 46.6	6 58 45	1.01	0.11		████████████████████						████████████████████	
A227	15 22 07.5	19 13 38	0.94	0.15		████████████████████						████████████████████	
1907	15 27 19.1	27 36 59	0.96	0.12	UGC 9680	████████████████████						████████████████████	
1924	15 34 59.3	20 02 48	1.09	0.11		████████████████████						████████████████████	
1933	15 38 37.9	6 07 27	0.88	0.11		████████████████████						████████████████████	
1974	15 58 10.9	24 34 33	0.87	0.12		████████████████████						████████████████████	
1977	15 59 28.7	13 57 46	0.78	0.10		████████████████████						████████████████████	

Table 2: Non Detections

Source FGC	R. A. (1950)	Dec. (1950)	a (blue)	b (blue)	UGC	Velocity Coverage (1000 km s ⁻¹)								
						0	2	4	6	8	10	12	14	
4	0 02 26.1	4 13 40	0.69	0.08					████████████████████					
7	0 04 40.3	33 38 11	1.17	0.10				████████████████████						
10	0 06 14.8	4 10 33	0.78	0.11		████████████████████								
22	0 11 07.2	5 41 58	1.00	0.10		████████████████████								
25	0 11 41.6	1 39 01	0.87	0.11					████████████████████					
27	0 13 21.1	15 43 18	0.95	0.12			████████████████████							
55	0 27 20.5	10 25 24	1.19	0.12		████████████████████								
64	0 34 26.7	3 09 28	1.06	0.15					████████████████████					
A9	0 36 49.3	12 11 02	0.74	0.11		████████████████████								
72	0 38 02.2	5 27 19	0.76	0.08		████████████████████								
95	0 48 02.1	2 49 36	0.76	0.11		████████████████████								
97	0 48 45.8	15 45 46	0.89	0.12		████████████████████								
130	1 08 17.0	14 01 04	0.88	0.08		████████████████████								
133	1 10 09.6	11 20 32	0.80	0.11		████████████████████								
146	1 15 35.2	14 49 56	1.14	0.11				████████████████████						
175	1 32 57.1	1 46 42	1.28	0.12					████████████████████					
A21	1 39 48.9	6 07 11	0.54	0.09		████████████████████								
A23	1 51 12.0	33 16 52	1.12	0.17				████████████████████						
224	1 57 08.7	12 48 50	0.62	0.08					████████████████████					
A28	2 02 47.9	14 22 34	0.67	0.10					████████████████████					
240	2 02 49.7	14 29 43	1.00	0.13		████████████████████								
270	2 14 16.6	14 15 04	1.00	0.12					████████████████████					
372	2 57 49.0	2 19 15	0.80	0.10				████████████████████						
400	3 12 14.9	16 01 46	0.71	0.09				████████████████████						
409	3 16 43.8	2 21 29	1.14	0.11				████████████████████						
A58	3 31 55.4	15 36 32	0.80	0.12				████████████████████						
450	3 43 59.1	3 00 26	1.26	0.17				████████████████████						
456	3 49 29.0	13 15 18	0.93	0.11		████████████████████								
462	3 57 24.8	34 38 03	0.94	0.11					████████████████████					
A67	4 07 46.4	0 41 02	1.00	0.20		████████████████████								
A69	4 16 00.8	17 39 21	0.67	0.19					████████████████████					
A70	4 26 05.0	31 16 56	0.91	0.19					████████████████████					
489	4 28 02.1	0 01 30	1.03	0.11		████████████████████								
490	4 28 02.5	0 08 35	0.89	0.09		████████████████████								
A77	4 56 15.1	0 58 21	0.67	0.13					████████████████████					
530	5 17 13.1	1 30 41	0.97	0.11					████████████████████					
A84	7 00 51.1	27 58 31	1.07	0.15		████████████████████								
612	7 12 59.1	31 50 20	1.00	0.12		████████████████████								
627	7 19 37.7	34 30 34	0.81	0.11		████████████████████								
641	7 33 18.0	23 46 31	0.67	0.09		████████████████████								
657	7 42 03.8	34 03 43	0.88	0.11		████████████████████								
658	7 42 17.5	12 20 31	0.98	0.10		████████████████████								
A90	7 46 50.9	19 02 43	0.69	0.11		████████████████████								
666	7 46 55.3	30 36 29	0.61	0.09		████████████████████								
669	7 49 07.1	17 52 58	0.74	0.10					████████████████████					
687	7 53 33.5	18 23 56	0.89	0.12				████████████████████						
699	7 58 05.5	8 46 37	0.97	0.10				████████████████████						
A95	8 04 39.1	24 00 14	0.58	0.09				████████████████████						
719	8 06 13.8	19 43 34	0.91	0.11				████████████████████						
A97	8 07 58.8	5 17 42	0.84	0.14					████████████████████					
771	8 33 05.5	29 25 12	0.76	0.10		████████████████████								
776	8 35 48.7	36 21 55	0.83	0.11		████████████████████								
778	8 37 06.0	21 44 15	0.72	0.10					████████████████████					
788	8 41 18.7	29 17 09	0.98	0.09				████████████████████						
798	8 46 50.5	35 19 20	0.66	0.08				████████████████████						
807	8 50 49.3	29 18 06	0.96	0.11		████████████████████								
814	8 52 39.7	3 13 38	0.84	0.11				████████████████████						